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Environmental Impact Report

580 California Street Office Building

DRAFT
81.705E

Publication Date: October 1, 1982

Public Hearing Date: November 4, 1982

Public Comment Period: October 1, – November 4, 1982

Written comments should be sent to the Environmental
Review Officer, 450 McAllister Street, San Francisco, CA 94102

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I. SUMMARY

A. PROJECT DESCRIPTION

Gerald D. Hines Interests proposes to construct a 23-story office building at 580 California St. The 16,000-sq.-ft. rectangular site is bordered on three sides by California, Kearny and Spring Sts. and is opposite the Bank of America Headquarters Building. The site is Lot 7 of Assessor's Block 240, located within the City's C-3-0 (Downtown Office) Planning Code Use District, and is surrounded primarily by high-rise and mid-rise buildings.

The proposed building would be 320 ft. tall and would provide about 340,000 gross sq. ft. of floor area, including about 329,500 gross sq. ft. of office space. The ground floor would contain about 10,500 gross sq. ft. of retail and lobby space. A mechanical penthouse would top the 23rd floor. The project would include one subsurface level containing mechanical equipment and accommodating about 35 passenger vehicles. The parking spaces would be reached by a ramp from Spring St. Three off-street loading spaces would be provided, at grade, from Spring St.

The building would be clad in granite and traditional in design, featuring a two-story pedestrian arcade at the base and large retail display windows along Kearny and California Sts. The top of the building would be shaped and detailed to provide visual interest and to contrast with the squared tops of surrounding buildings.

Construction would be expected to begin in early 1983 and to be completed within two years. Initial project occupancy would be scheduled for early 1985.

B. ENVIRONMENTAL SETTING

The site contains about 16,000 sq. ft. and is occupied by a four-story office building. The existing structure is built out to the property lines and contains about 70,000 gross sq. ft. of office space and one subsurface parking level. The existing building contains offices of the Fireman's Fund Insurance Company and has no ground-floor retail or banking uses.

C. ENVIRONMENTAL IMPACTS

In the Initial Study for the project (see Appendix A, p. 127) it was determined that the proposed building would have no significant effect in the following areas: land use compatibility, project visibility, operational noise, public services and utilities, biology, geology, hydrology, construction-related air quality, health hazards and cultural resources; these issues were focused out of the EIR and will require no further discussion. Not all issues covered in the EIR are physical environmental impacts as defined under the California Environmental Quality Act (CEQA).

Land use and Zoning (see Section IV, p. 43). The project would be responsive to general objectives of the San Francisco Comprehensive Plan and policies stated for the C-3-0 (Downtown Office) District. The 320 ft. project tower would be the maximum height permitted in the 320-I Height and Bulk District. The building length would be about 124 ft., the length of the site; this is about 45 ft. less than the maximum permitted length of 170 ft. The diagonal dimension of about 175 ft. would be about 25 ft. less than the permitted maximum dimension of 200 ft. According to Section 124 of the City Planning Code, the basic permitted Floor Area Ratio (FAR) in the C-3-O District is 14:1, that is, a building may have a floor area up to 14 times the area of its site. This would permit development of about 224,000 gross sq. ft. on the project site. About 116,000 sq. ft. of basic permitted floor area would be transferred to the site from adjacent parcels under Section 127(a) of the Code (see Section IV.A, p. 43, for a detailed discussion of the transfer of development rights under the Planning code); the total project FAR would be about 21.3:1.

The proposed building foundation and subsurface parking level would extend beneath City sidewalks and would require a revocable encroachment permit from the Department of Public Works and a variance from Section 155(b) of the City Planning Code. Use of this area would not respond with the Transportation Element of the Comprehensive Plan. The number of off-street loading spaces would conform to City Planning Commission Resolution No. 9286 and would exceed the minimum requirements set forth in Section 154 of the City Planning Code. Provision of parking would not respond with a policy of the Downtown Parking Plan of the Transportation Element of the Comprehensive Plan.

The Department of City Planning (DCP) has prepared a document, Guiding Downtown Development (GDD), July 1982, which contains a series of proposed land use controls for the downtown. (See Table 2, p.46, and Section VII, Alternatives Two and Three, pp. 108-116 for a discussion of GDD.) The project would exceed the base 12:1 FAR for office space as discussed in GDD by about 2:1 and would contain an additional 7:1 FAR through the transfer of development rights under Section 127(a). This procedure would not be affected by GDD. The project would be 30 ft. shorter than the GDD recommended height limit of 350 ft. The project would include ground-floor retail space, encouraged by GDD. With the exception of the pedestrian arcade along California St., no public open space would be provided by the project. The provision of parking would not be consistent with GDD policy.

Urban Design (see Section IV, p.47). The project would require the demolition of the existing four-story structure on the site. The proposed building would be similar in scale to existing high-rise development in the vicinity. The defined two-story base and large retail windows would provide a pedestrian scale and visual interest at the street level. Upper story windows would be a combination of set in and bay windows. Facade detailing would reduce the appearance of bulk and the top of the building would be sculptured. Much of the project shadow pattern would coincide with shadows cast by existing nearby structures. The project would not shade any public parks or plazas. The project would modify the wind environment of the site vicinity, but street level wind speeds would generally remain similar to existing conditions.

Employment, Housing and Fiscal Factors (see Section IV, p.59). The project would provide about 1,345 permanent, full-time jobs, resulting in an increase in on-site employment of about 1,120 jobs. Assuming project tenants would be primarily in finance, insurance and real estate, the employment multiplier effect would result in about 1,590 additional jobs in other sectors of the Bay Area economy. The project would also provide about 795 person-years of construction labor during the two-year construction period. Through the multiplier effect, construction would result in about 1,230 additional person-years of employment in the Bay Area.

The project would contribute to the total amount of new office space available in the downtown area and to the demand for housing in San Francisco. Based on the Department of City Planning's housing formula for housing requirements for office development, the

project employees would generate a demand for about 290 new housing units. Additional demand for City services generated by the project would result in costs to the City. Generally, the overall costs per unit of services provided (per sq. ft. or per employee) to the new building would be lower than for the existing building.

Transportation (see Section IV, p.72). Construction would require the use of the curb lanes on Kearny and California Sts., and would temporarily affect existing traffic conditions. Sidewalks on California, Kearny and Spring Sts. would be closed for 14 to 18 months; covered walkways would be provided for pedestrians.

The proposed project would generate approximately 960 new peak-hour trips to and from the project site. Of these, an estimated 245 trips would be made by auto, 190 would be on Muni, 130 on BART, and the remaining 195 on other public transit (SamTrans, Southern Pacific, AC Transit) and other modes (walking, taxis, etc.). The project would result in an increase of less than 10% in the estimated ratio of traffic volumes to capacity of surrounding intersections. Space for valet parking of about 35 automobiles would be provided in a basement level reached by a one-way ramp from Spring St. Most of the project demand for parking would have to be accommodated by off-site parking. Pedestrian traffic on California St. would increase 1982 sidewalk traffic from five to ten percent of capacity to as much as 15% of capacity during noon and p.m. peak hours.

Other Impacts. Because of the increase in building size, energy use on the project site would increase; however, the proposed building would be more energy efficient than the existing structure on the site. Project energy consumption would meet or exceed Title 24 standards. Pile driving would not be required for the project. Construction activities, particularly excavation and exterior finishing, could raise interior noise levels in offices nearest the site to as high as 78 dBA at 550 Kearny St. and 75 dBA at 550 California St., assuming closed windows. Noise levels above 75 dBA would interfere with normal speech and could be distracting to employees in these buildings.

D. MITIGATION MEASURES

Various measures have been identified that would reduce or eliminate potential environmental impacts resulting from the proposed project (see Section V, p.97). The City Planning Commission could include some or all of these measures as conditions of

project approval. Mitigation measures which are specific to the project and not required by statutes or laws include: coordinating construction activities; providing long-term parking for about 35 vehicles to partially alleviate the parking demand generated by the project; encouraging a "flex-time" system for project employees; providing a transportation broker to encourage the use of transit systems and ridesharing; and installing a dual-pane tinted window system and other energy-saving devices to reduce project energy consumption.

E. ALTERNATIVES TO THE PROPOSED PROJECT (see Section VII, p. 105).

Alternative One would not use the transfer of permitted basic gross floor area from adjacent parcels to increase the amount of office space. This alternative would consist of a 15-story (200 ft.) office building containing approximately 224,000 gross sq. ft. of commercial space (FAR of 14:1). There would be one retail/banking level (containing about 10,500 sq. ft.) and 14 floors of office space (containing about 213,500 sq. ft.). There would be two levels of subsurface parking which would not extend beneath any City sidewalks. This alternative would be similar to the project in design and form, but would be about 120 ft. shorter. Compared to the proposed project, the amount of office space would be reduced by about 35% under Alternative One and site-related travel would be about 40% less. This alternative is unacceptable to the project sponsor because in the sponsor's opinion, it would be an economic underuse of the site.

Alternative Two would be a 17-story office building (about 240 ft. tall) designed to comply with the recommended guidelines contained in Guiding Downtown Development (GDD). This alternative would contain about 233,000 gross sq. ft. of office and retail space. This represents the GDD base commercial space for the site (about 192,000 gross sq. ft.) plus about 31,000 sq. ft. of basic permitted floor area transferred from an adjacent parcel under Section 127(a) of the City Planning Code. This transfer would result in a total FAR of about 14:1. The ground floor would contain about 10,000 gross sq. ft. of retail space in five establishments, open space uses of about 9,300 sq. ft., and 16 floors of office space. This alternative would not provide off-street parking for passenger vehicles. The amount of office space would be reduced about 30%; the building tower would be about 80 ft. shorter in height than the project. Under this alternative, operational traffic impacts would be similar to the project although the number of peak-hour trips would be reduced about 40%. In the opinion of the project sponsor this alternative is unacceptable because

I. Summary

it would not maximize the allowable developable area and would thus be an economic underuse of the site. The sponsor also rejects this alternative because the project design is, in the sponsor's opinion, already attractive and of high quality.

Alternative Three would be a 24-story combined office and residential building, approximately 330 ft. tall. This alternative would provide the base amount of commercial space permitted in GDD and a transfer of about 25,000 sq. ft. of basic permitted gross floor area to the site from an adjacent parcel. Alternative Three would contain about 217,000 gross sq. ft. of office, 10,000 sq. ft. of retail space, 12,100 sq. ft. of open/recreational space and about 80,000 gross sq. ft. of residential space (73 condominiums). The overall FAR for this alternative would be about 19:1, which includes 5:1 additional FAR for housing (over the recommended base office FAR of 12:1 and about 2:1 FAR from the transfer of floor area under Section 127 of the Planning Code). There would be two levels of subsurface parking; all parking would be allocated for the residential units. The parking levels would not extend beneath City sidewalks. Separate lobby and elevator accesses would be provided for the residential and office portions of the building. Open space for building residents would be provided by private balconies for individual condominiums; under GDD, this space would partially satisfy the recommended GDD requirement to provide recreation and open space for the commercial portion of the building. Other open space uses would include the ground-floor pedestrian arcade and a cultural facility on the second floor. Under Alternative Three the amount of office space would be reduced about 35%; the building tower would be about 10 ft. taller than the proposed project. This alternative would satisfy on-site a portion of the housing demand generated by the office space. Operational traffic impacts would be about half those of the proposed project. In the opinion of the project sponsor this alternative is unacceptable because it would be an economic underuse of the site and the site is not a suitable location for residential use.

Alternative Four is the No Project alternative. Should this alternative be implemented, the site conditions and uses would remain the same as at present. This alternative would preserve future options for development of the site. This alternative could result in the development of office space comparable to the project at another location. Alternative Four has been rejected by the project sponsor because of existing interests in the site and the sponsor's conviction that the project site is a prime location for office development in the City.

II. PROJECT DESCRIPTION

A. PROJECT SPONSOR'S OBJECTIVES

The project sponsor, Gerald D. Hines Interests, proposes to construct a 23-story office building at the northeast corner of California and Kearny Sts. (see Figure 1, p. 8). The sponsor's objectives are to construct a high-quality, locally compatible commercial office building, increase the amount of office space available in the downtown area, and realize a reasonable return on investment. The project sponsor intends to develop an energy-efficient building that would architecturally complement adjacent high-rise structures. The project architect is Johnson/Burgee of New York.

B. PROJECT LOCATION

The project site is Lot 7 in Assessor's Block 240, located within the City's C-3-0 (Downtown Office) Planning Code Use district. The 16,000-sq.-ft. rectangular site, which has frontages of 124 ft. on California St. and 128 ft. on Kearny and Spring Sts., is opposite the Bank of America Headquarters Building (see Figure 2, p. 9). The proposed project would replace the four-story Fireman's Fund Insurance Building.

C. PROJECT DESCRIPTION

The project would be a 320-ft.-tall, 23-story building, containing a total of about 340,000 gross sq. ft. of floor area, excluding foundation, mechanical and parking space (see Figure 3, p. 10). There would be one subsurface level containing mechanical equipment and accommodating about 35 passenger vehicles (see Figure 4, p. 11). The parking facility would be reached by a ramp at the northeast corner of the site via Spring St. Three off-street loading spaces would be accessible at grade from Spring St.

The main building entrance on California St. would provide access to the office lobby and elevator banks. Separate entrances to ground-floor retail space would be located on California and Kearny Sts. (see Figure 5, p. 12). Total lobby, elevator and retail area on the first floor would be about 10,500 gross sq. ft. The upper floors would contain offices



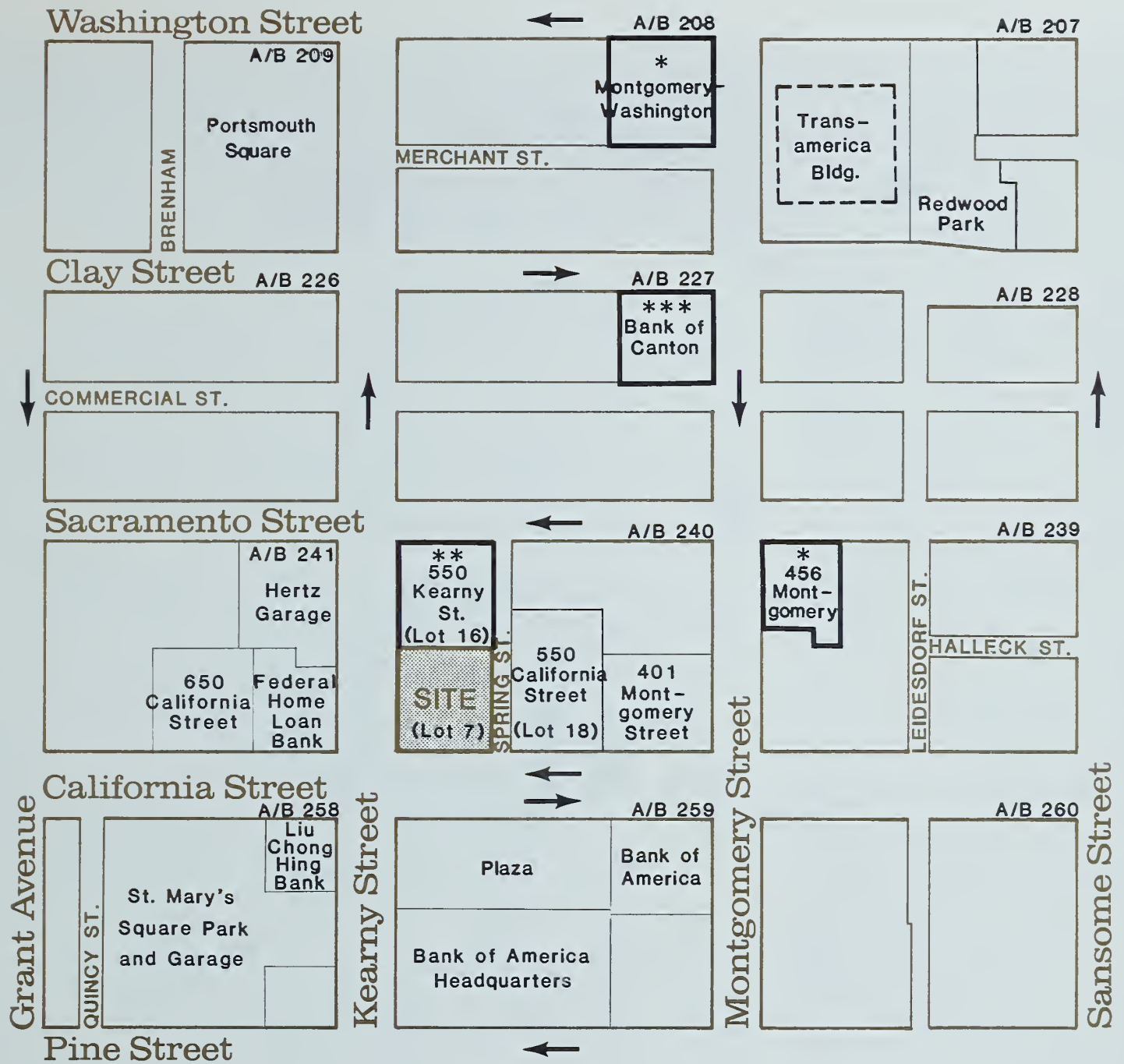
LEGEND



Site

FIGURE 1: Project Location

SOURCE: Environmental Science Associates, Inc.



LEGEND



Project Location



Sites Under Development

*

Under Construction

**

Addition Under Construction

Approved

A/B 240

Assessor's Block Number

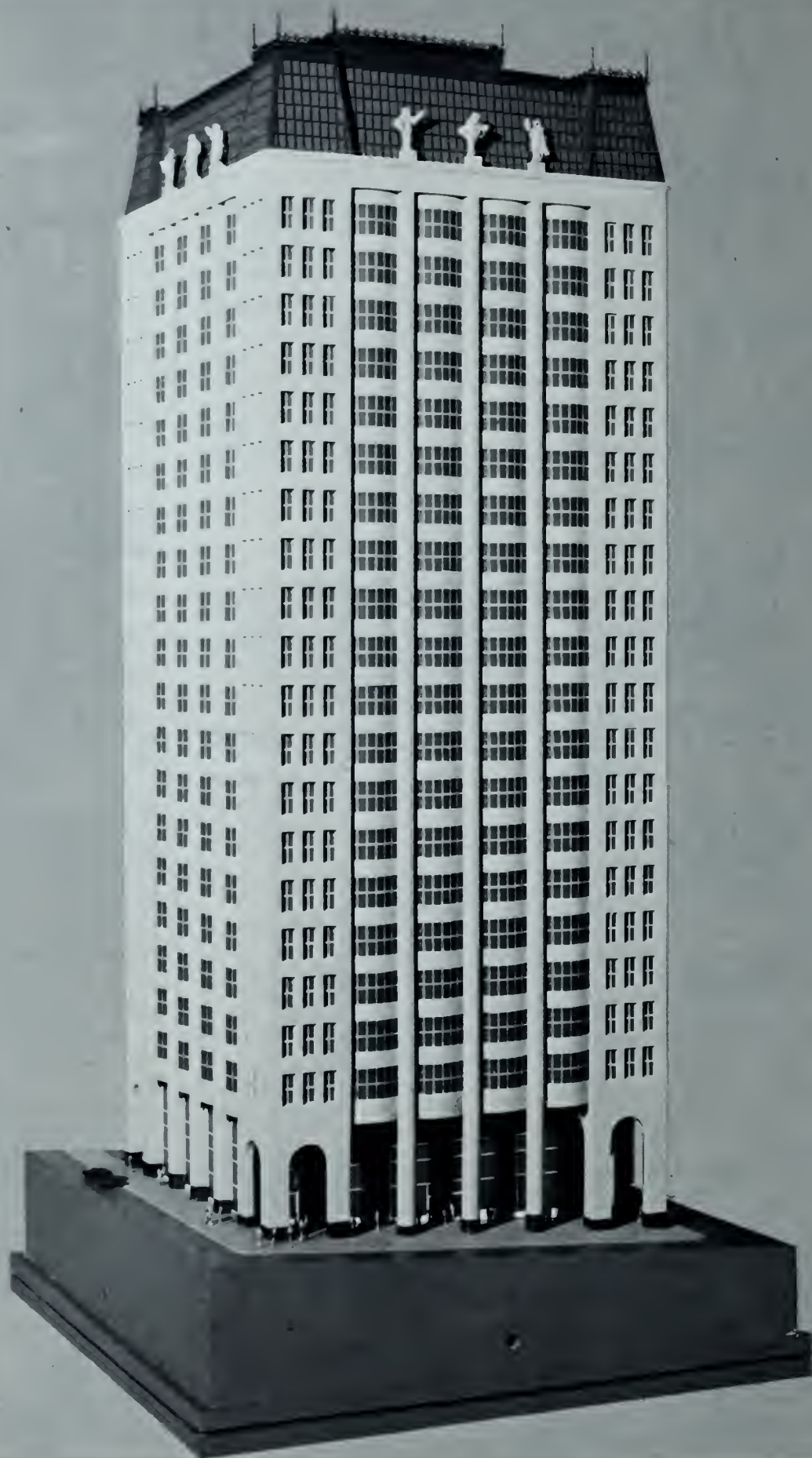


Direction of Traffic Flow



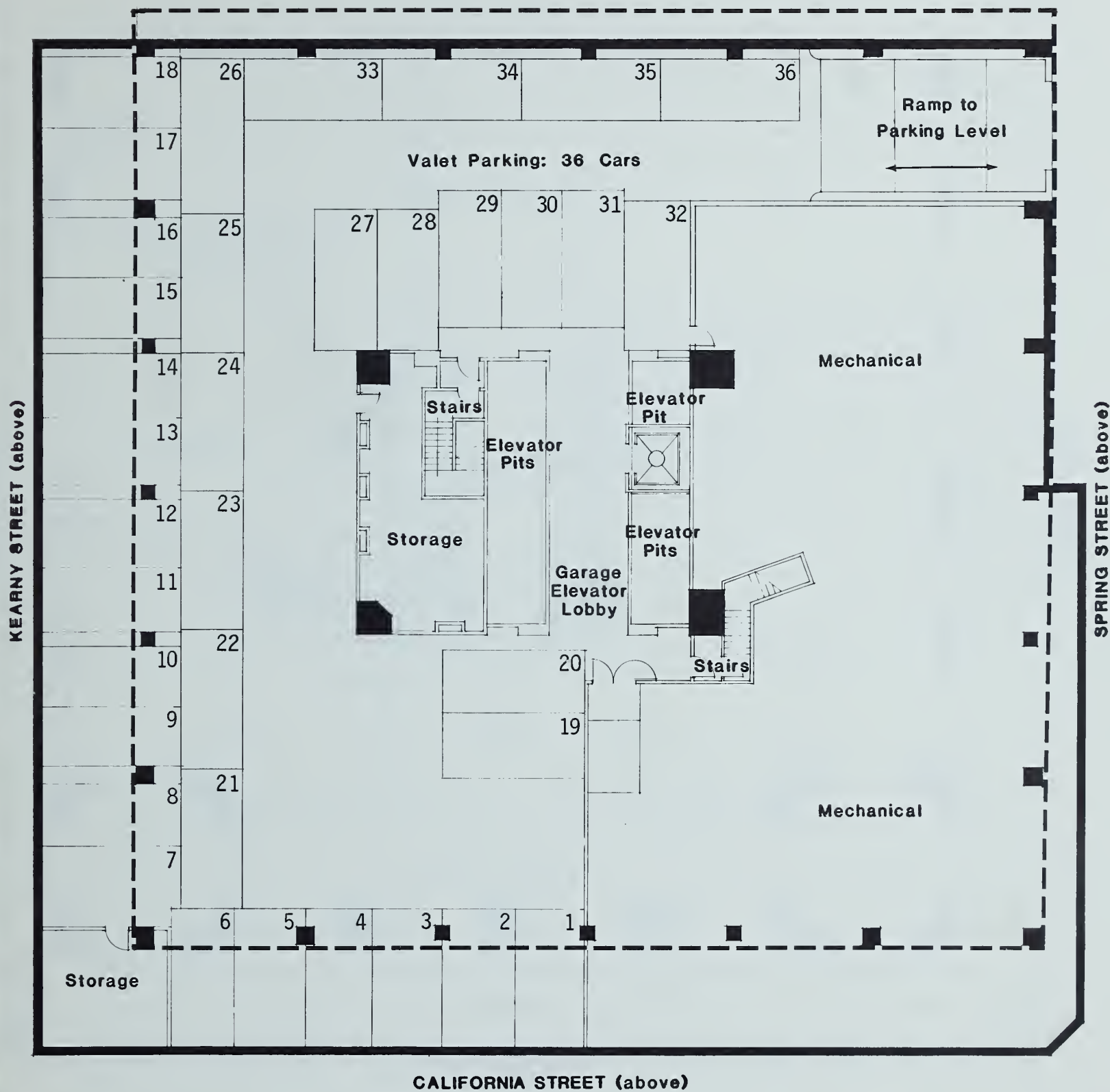
FIGURE 2: Site and Vicinity

SOURCE: Environmental Science Associates, Inc.

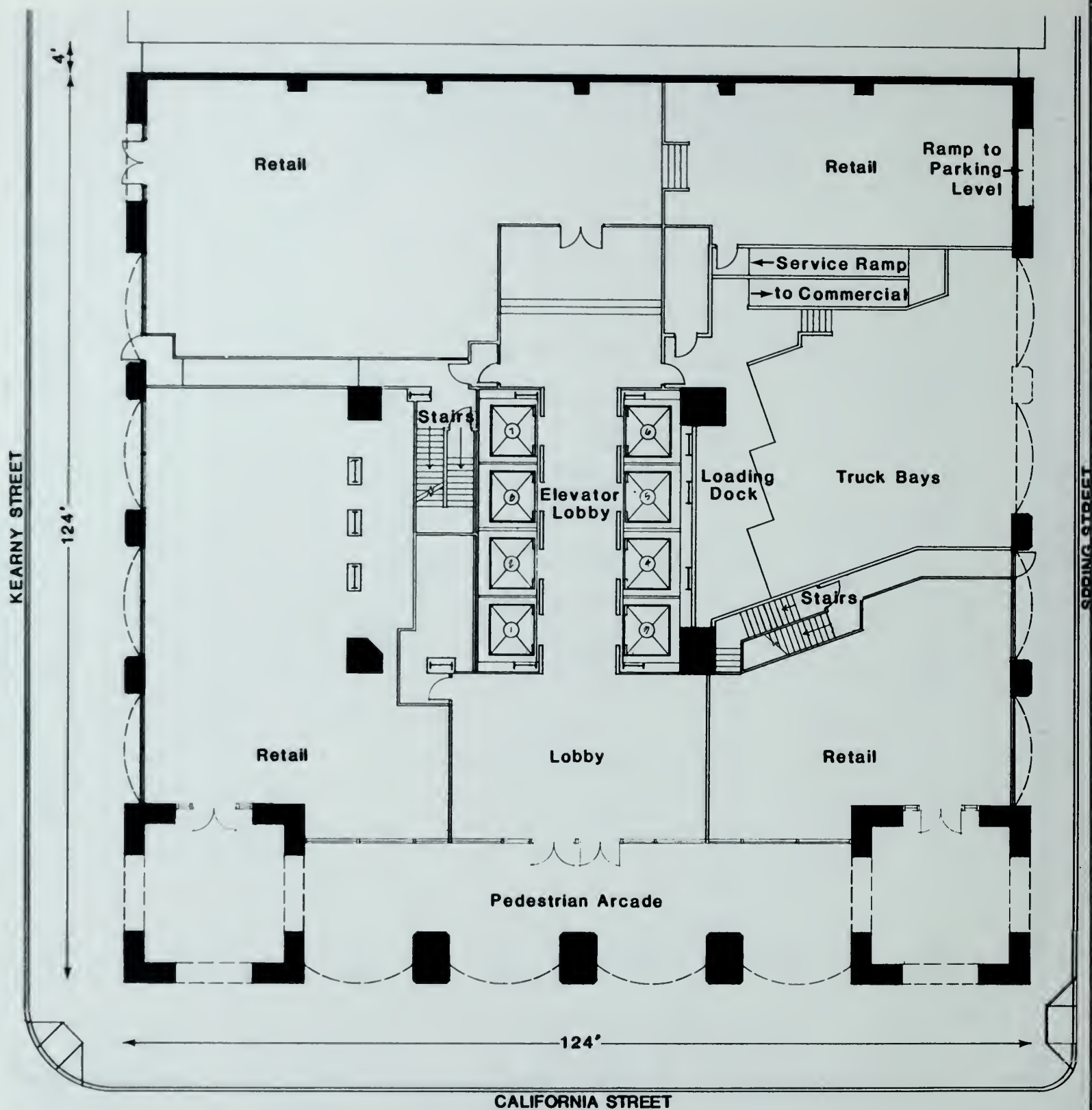


**FIGURE 3: California St. Elevation
(Photo of Model)**

**SOURCE: Johnson Burgee Architects;
Square One Film and Video**



SOURCE: Kendal/Heaton/Associates, Inc.



LEGEND

- Columns
- Windows (above)



FIGURE 5: Ground-Floor Plan

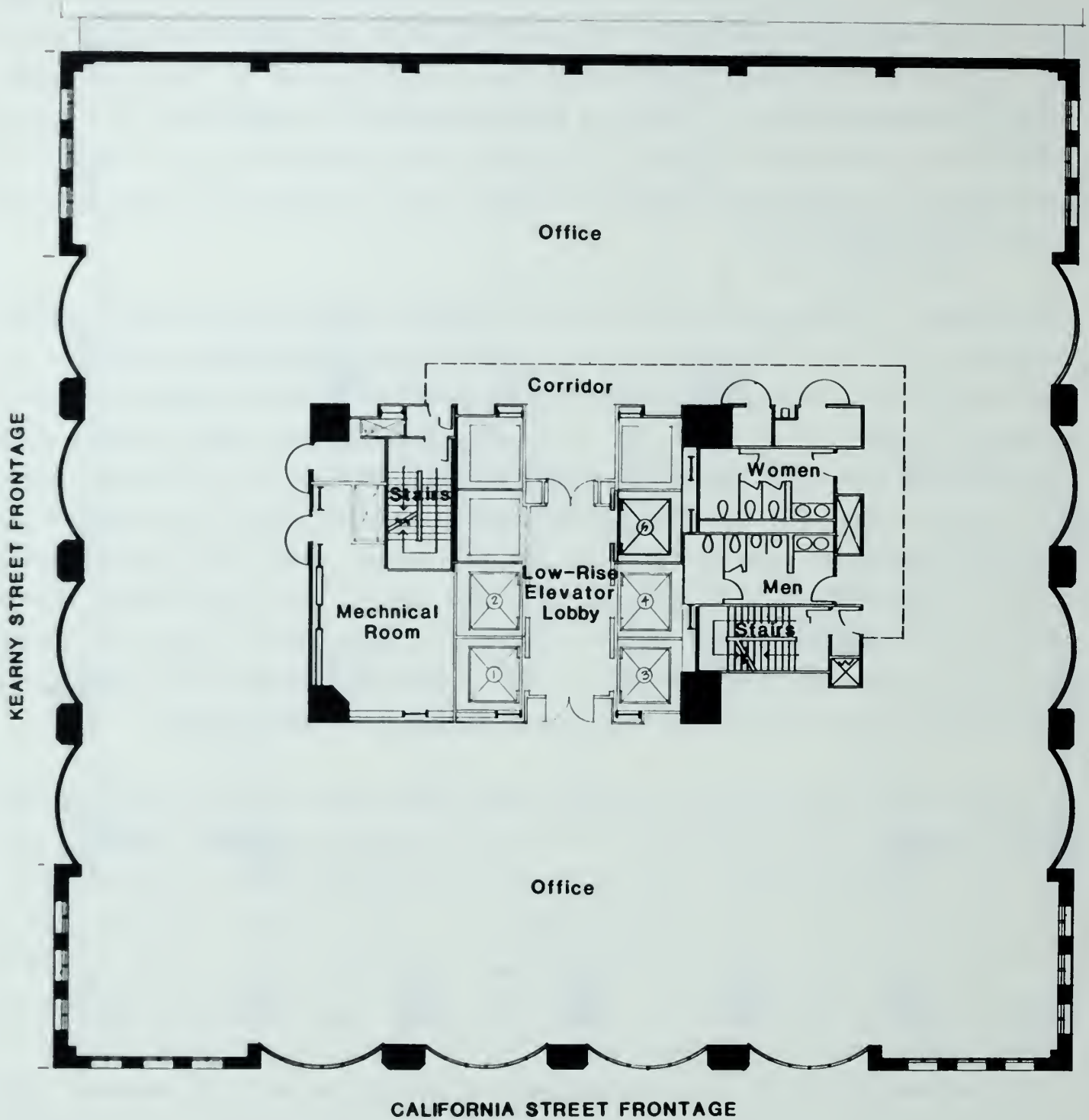
SOURCE: Kendall/Heaton/Associates, Inc.

II. Project Description

(see Figure 6, p. 14); there would be a total of about 329,500 gross sq. ft. of office space on the second through 23rd floors. The second floor would offer about 12,500 gross sq. ft., the third through 23rd floors would average about 15,000 gross sq. ft. The office portion of the building would rise to a height of approximately 320 ft.; there would be a rooftop mechanical penthouse (see Figure 7, p. 15), about 12 ft. tall. (Up to 16 ft. of height for mechanical penthouses and equipment is exempt from the height limit under Planning Code Section 260(b).)

The exterior of the building would be granite and light in color, and the facade treatment would be a three-part composition (having a distinct base, central section, and top). The base would have a two-story pedestrian arcade along California St. intended to provide pedestrian scale (see Figure 7, p. 15). At the ground level, large display windows would provide visual interest to pedestrians on Kearny and California Sts. The four corners of the building would be anchored by distinct vertical elements rising to the roofline and containing "punched" windows set-in the granite exterior. Three five-ft.-wide columns would rise from the street to the top of the 21st story in the central section of each facade; each column would be topped with a statue (see Figures 7 and 8, pp. 15-16). Recessed between the columns would be curved, bay-style windows. The building top would be sloped and consist of tinted glass with wrought iron embellishments.

The basic Floor Area Ratio (FAR) allowed under Section 124 of the City Planning Code for a structure in the C-3-O District is 14:1; that is, a building may have a floor area up to 14 times the area of its site. This would permit development of about 224,000 gross sq. ft. on the project site. Under Section 127(a) of the Code, the project sponsor intends to purchase and transfer to the site a total of about 116,000 gross sq. ft. of basic permitted floor area from adjacent parcels. About 69,000 sq. ft. would be transferred from the Cahill property on Lot 16 of Assessor's Block 240 (550 Kearny St.), and about 47,000 sq. ft. would be transferred from the Utah International Property on Lot 18 of Assessor's Block 240 (550 California St.) (see Figure 2, p. 9). The total gross floor area of the building would be approximately 340,000 sq. ft., representing a total project FAR of about 21.3:1 (see Table 1, p. 17). (See Section IV.A, p. 43, for a detailed discussion of the base FAR and the transfer of development rights under the Planning Code.) This would exceed the allowable basic FAR of 14:1 by about 7.3:1.



LEGEND

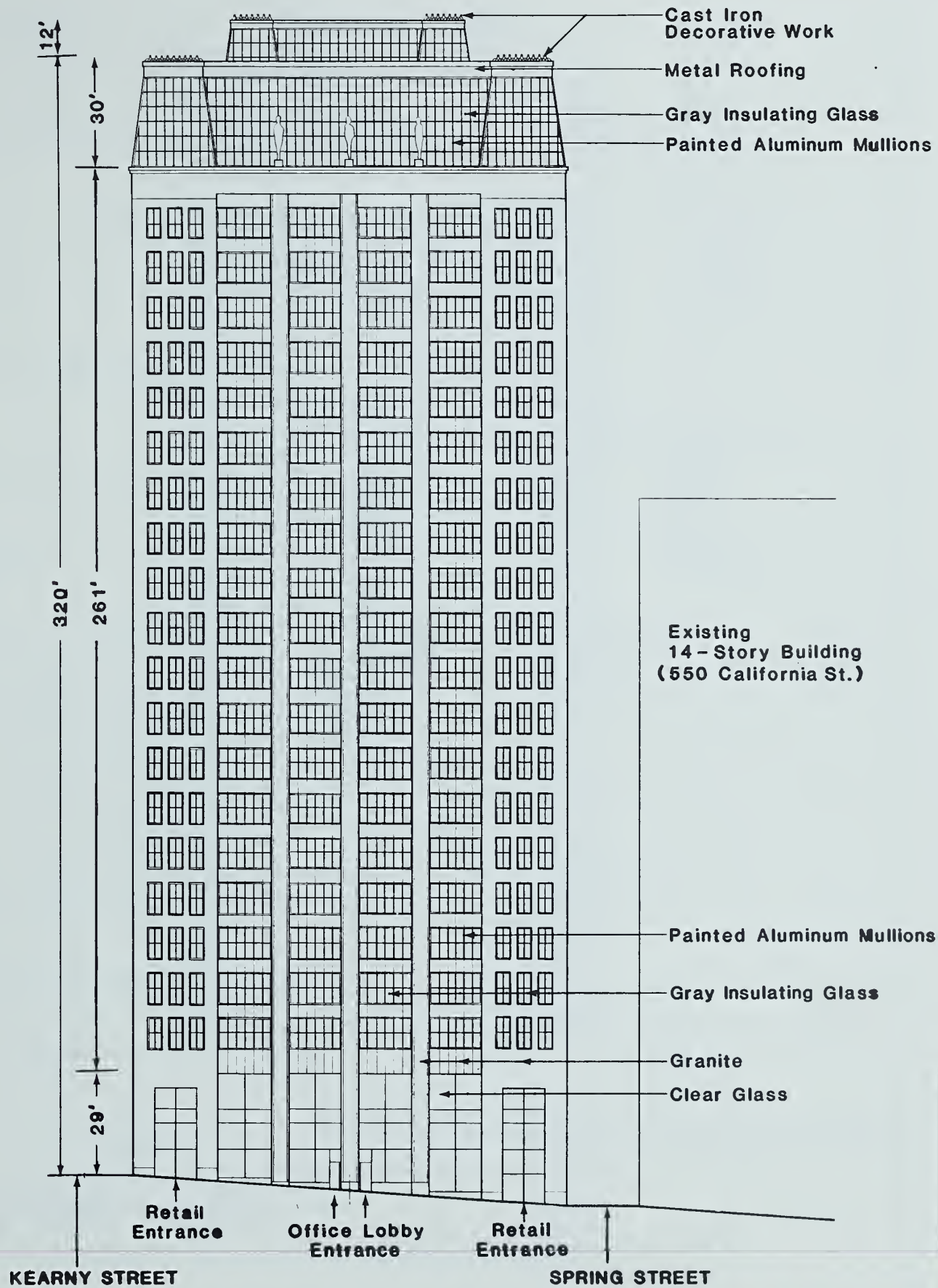


Columns
Windows



FIGURE 6: Typical Low-Rise Office Floor Plan

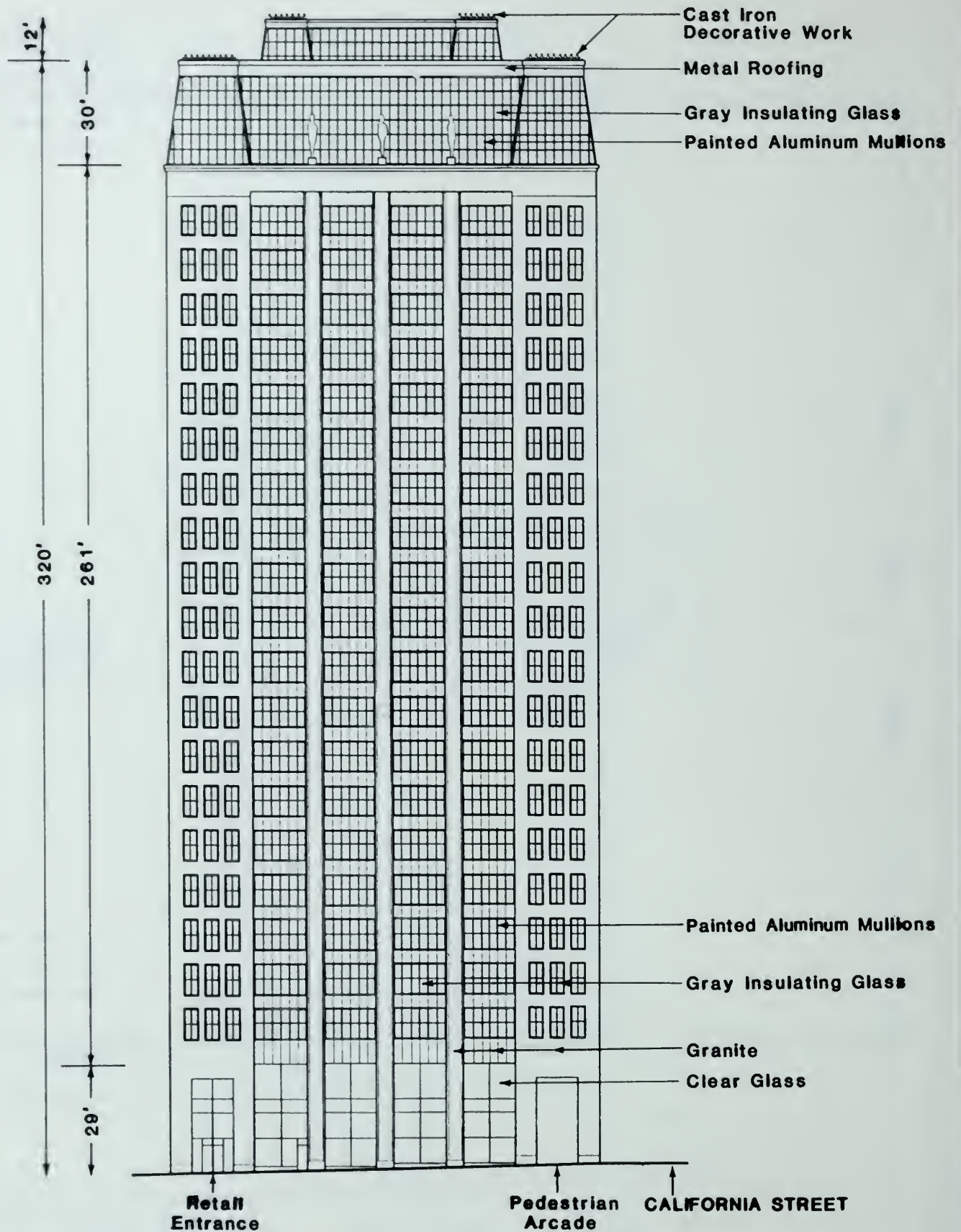
SOURCE: Kendall/Heaton/Associates, Inc.



0 40
FEET

FIGURE 7: California Street Elevation

SOURCE: Kendall/Heaton/Associates, Inc.



0 40
FEET

FIGURE 8: Kearny Street Elevation

SOURCE: Kendall/Heaton/Associates, Inc.

TABLE 1: PROJECT CHARACTERISTICS

NUMBER OF STORIES*		HEIGHT AND BULK MEASUREMENTS		
Retail/Lobby	1		<u>Proposed</u>	<u>Permitted**</u>
Office	<u>22</u>			
<u>Total Stories</u>	23	Height:	320 ft.	320 ft.
		Length:	124 ft.	170 ft.
		Diagonal:	175 ft.	200 ft.

PROPOSED FLOOR AREA

<u>Use</u>	<u>Gross Sq. Ft.</u>	<u>Net Leasable Sq. Ft.</u>
Retail (6,500 sq. ft.) and Lobby	10,500	6,500
Office	<u>329,500</u>	<u>301,900</u>
<u>Total Project</u>	340,000	308,400

FLOOR AREA CALCULATIONS

	<u>Floor Area (gross)</u>	<u>FAR</u>
Basic Permitted Floor Area***	224,000 sq. ft.	14.0:1
Transfer Basic Permitted Floor Area****		
-Lot 16 of Assessor's Block 240		
(550 Kearny St.-Cahill Property)	69,000 sq. ft.	--
-Lot 18 of Assessor's Block 240		
(550 California St.-Utah International)	<u>47,000 sq. ft.</u>	--
Total Transfer of Basic Permitted Floor Area	116,000 sq. ft.	7.3:1
Total Floor Area Permitted by Code	340,000 sq. ft.	21.3:1
Proposed Project	340,000 sq. ft.	21.3:1

* Excluding one subsurface level, containing mechanical equipment and accommodating about 35 passenger vehicles

** Section 270 of the City Planning Code

*** Section 124 of the City Planning Code

**** Section 127(a) of the City Planning Code (See Section IV.A, p. 44 of the EIR of a discussion of the transfer of development rights.)

SOURCE: Environmental Science Associates, Inc.

PROJECT OCCUPANCY

The project sponsor proposes to lease approximately 6,500 net sq. ft. of ground-floor retail space, which is expected to accommodate about three tenants. Commercial retail activities could include a variety of uses, such as a branch bank, a small apparel store or office equipment store. Approximately 301,900 net sq. ft. of office space is expected to be leased on the upper floors. Tenants are expected to be primarily professional service firms and executive departments of financial institutions and other businesses. The sponsor estimates the number of tenant firms to be about 15 and anticipates that most would have a larger proportion of management, professional, and technical staff than clerical staff./1/

PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

SCHEDULE

Detailed project design is scheduled by the sponsor for completion in late 1982. Demolition and site clearance are anticipated to require about two months; excavation, one month; foundation preparation, two months; steel erection, six months; exterior finishing, six months; and interior finishing, six months. Some of these time durations would overlap. Project occupancy is expected begin in early 1985 based on a full construction period of about two years./1/

COST

Project development costs would be about \$50 million in 1982 dollars, including approximately \$24 million for basic construction. Retail space on the ground floor is expected to rent for approximately \$20 per sq. ft. per year. Office space is expected to rent for an average of about \$30 per square ft. per year./2/

APPROVAL REQUIREMENTS

Following a public hearing before the City Planning Commission, responses to all written and oral comments will be prepared; this EIR will be revised accordingly and presented to the City Planning Commission for certification as to accuracy and completeness.

Under its policy of Discretionary Review of all downtown high-rise buildings during the period of Interim Controls, the City Planning Commission would review, per its Resolution No. 8474, adopted January 17, 1980, the building design and its environmental context in detail./3/ Under Section 127(a) of the City Planning Code, the proposed project would transfer to the site a total of about 116,000 gross sq. ft. of basic permitted floor area from two adjacent lots on Assessor's Block 240. This would allow the proposed building to have an FAR of 21.3:1; no special action would be required of the City Planning Commission to permit the floor area transfer. (See Section IV.A, p.44, for a detailed discussion of the transfer of development rights under the Planning Code.) Upon purchase of the permitted gross floor area, notice of the transfer would be recorded with the deeds of all the properties affected. After a public hearing the Planning Commission would adopt a resolution approving, approving with conditions, or disapproving the project. If the project were approved by the City Planning Commission, the project sponsor would then obtain demolition, building and related permits from the Central Permit Bureau of the Department of Public Works.

The subsurface level proposed for the project would extend beneath the California St. and Kearny St. sidewalks. A revocable encroachment permit, to allow the use of subsurface space beneath public sidewalks, would be applied for with the building permit. According to Section 310.1 of the San Francisco Building Code, the encroachment permit application would require approval from the Superintendent of Building Inspection and City Engineer. The project would require a variance, approved by the Zoning Administrator, from Section 155(b) of the City Planning Code which requires that every off-street parking space be provided entirely on private property.

NOTES - Project Description

/1/ James C. Buie, Jr., Project Manager, Gerald D. Hines Interests, telephone communication, March, 24, 1982.

/2/ James C. Buie, Jr., Project Manager, Gerald D. Hines Interests, written communication, April 5, 1982.

/3/ City Planning Commission Resolution No. 8474, January 17, 1980. Board of Supervisors Ordinance 240-80, June 1, 1980, established interim limitations in effect until July 1, 1981 on the use of bonuses. The limitations were extended (in June 1981) until September 1, 1981 and, subsequently, by Ordinance 34-82, until March 1, 1983.

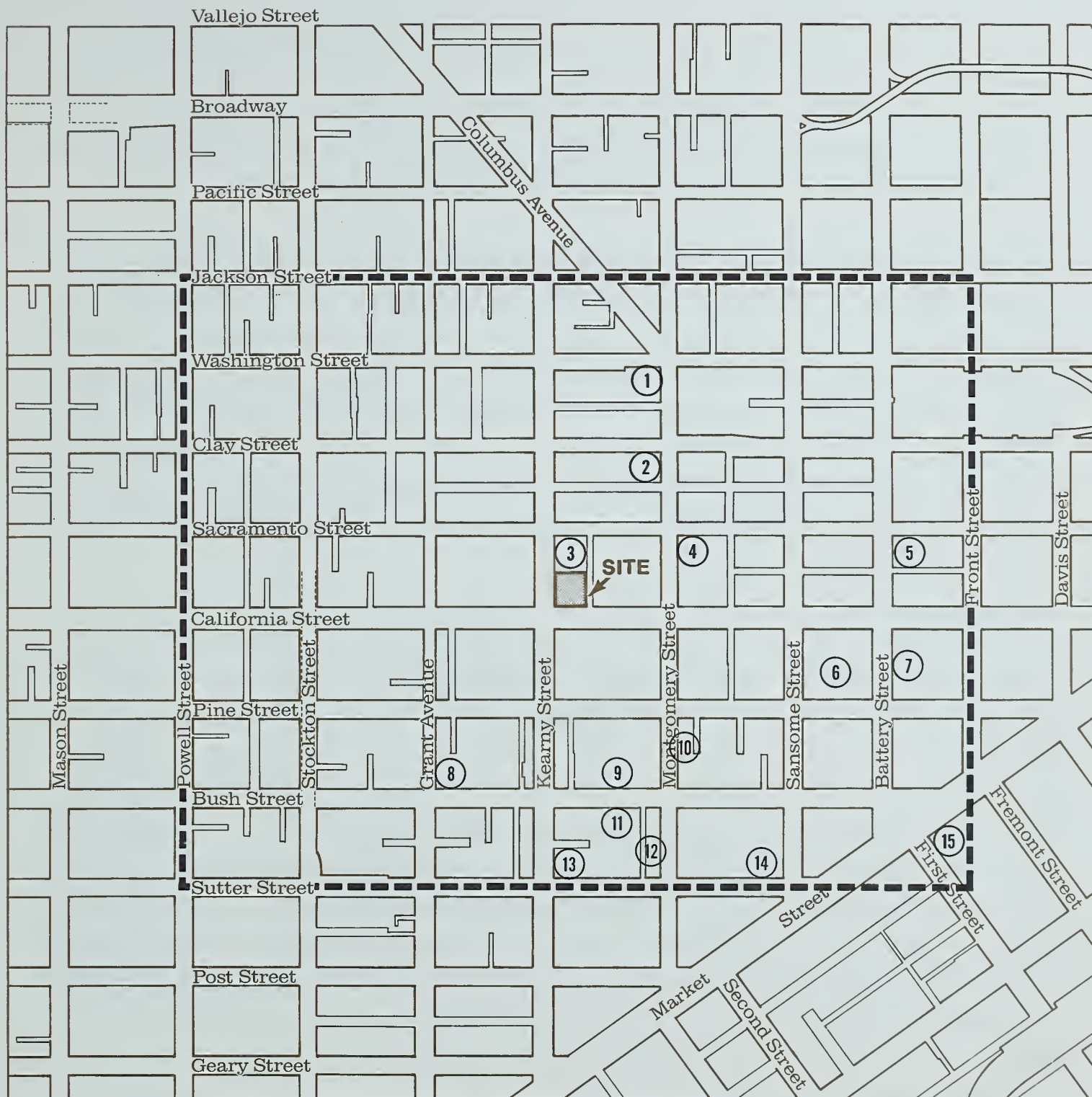
III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The project site is Lot 7 of Assessor's Block 240 and is bounded by California, Kearny and Spring Sts. (see Figure 9, p. 21). The site is presently occupied by a four-story office building. The existing structure is built out to the property lines and contains approximately 70,000 gross sq. ft. of office space and a subsurface parking level. The building, which has no ground floor retail or banking space, is currently occupied by the Fireman's Fund Insurance Company; the firm is scheduled to vacate the structure by the fourth quarter of 1982 and will relocate most of its offices to Novato. This relocation is not a result of the proposed project.

Predominant land uses in the vicinity consist of high-rise and mid-rise office buildings with branch banks, retail stores and eating and drinking establishments on the ground floors. Adjacent to the site on the north is the six-story 550 Kearny St. office building; a five-story (71 400 gross sq. ft.) addition to this building is currently under construction. East of the site, across Spring St., is the 13-story 550 California St. building, and to the northeast is the six-story 635 Sacramento St. garage and office building. The 52-story Bank of America Headquarters Building is located south of the site, at 555 California St. Other buildings on blocks surrounding the site primarily contain office space with some ground-floor retail uses. St Mary's Square (a public park and parking garage) is located one block southwest of the project site, Portsmouth Square (a public park) is located two blocks to the north, Transamerica Redwood Park is located three blocks to the northeast, and there is a plaza on the north side of the Bank of America Building, directly across California St.

The following office projects are approved or under construction within three blocks of the project site: the 550 Kearny St. addition, 333 California St., 101 Montgomery St., 466 Bush St., 456 Montgomery St., 353 Sacramento St., 250 Montgomery St., the Bank of Canton Building at Montgomery and Clay Sts., 122 Battery St., Central Plaza at First and Market Sts. and the Montgomery - Washington Building. These developments, upon full buildout, will provide about 2.5 million sq. ft. of office space and 50,000 sq. ft. of retail



LEGEND

--- 3-Block Radius Boundary

1. Montgomery/Washington (under construction)
2. Bank of Canton (approved)
3. 550 Kearny Addition (under construction)
4. 456 Montgomery (under construction)
5. 353 Sacramento (under construction)
6. 333 California (approved)
7. 122-130 Battery (approved)
8. 466 Bush (approved)
9. 350 Bush-Russ Tower (under review)
10. 250 Montgomery at Pine (approved)
11. 333 Bush (under review)
12. 101 Montgomery (under construction)
13. 222 Kearny (under review)
14. One Sansome (under construction)
15. Central Plaza (approved)



FIGURE 9: Office Projects Under Construction, Approved and Proposed Within Three Blocks of Project Site (as of September 1982)

SOURCE: Department of City Planning and Environmental Science Associates, Inc.

floor area. In addition, the following office projects are proposed within three blocks of the site and are under formal environmental review by the Department of City Planning: the Russ Tower Addition at 350 Bush St., 333 Bush St. and 222 Kearny St.

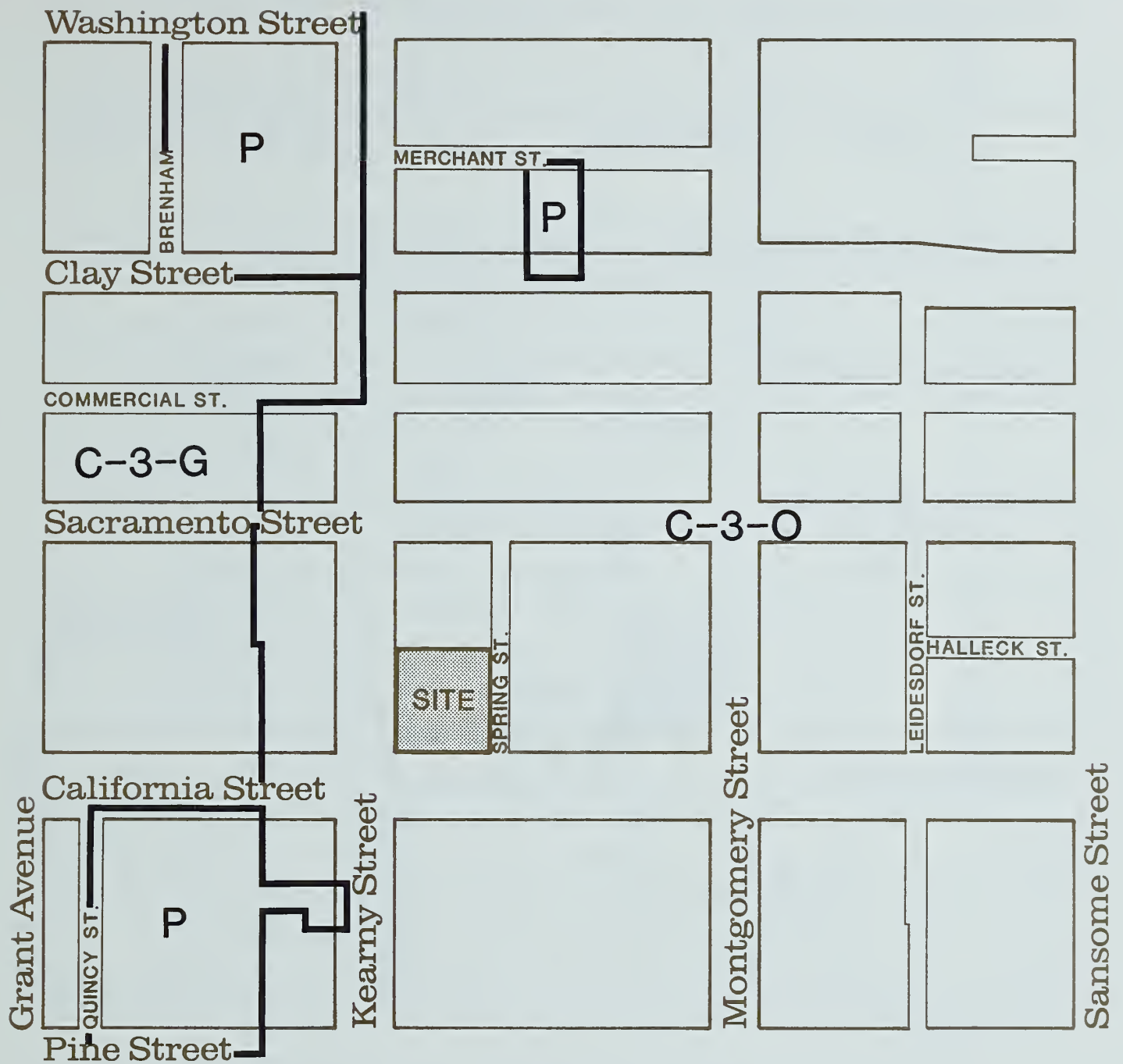
The City Planning Code Use Classification for the site is C-3-0, Downtown Office District (see Figure 10, p. 23). Office and retail uses are permitted in this zoning district with a basic Floor Area Ratio (FAR) of 14:1 (Section 124 of the City Planning Code). Under the Interim Controls on downtown high-rise office development imposed by Municipal Ordinance No. 240-80 (amending Section 126 of the City Planning Code), effective July 1, 1980, development bonuses are not permitted for office use; bonuses for residential and hotel use may be permitted by Conditional Use authorization. The transfer of permitted basic floor area from contiguous lots is permitted under Section 127(a) of the Planning Code.

The project site is in the 320-I Height and Bulk District, in which the maximum permitted height is 320 ft., the maximum permitted facade width above a height of 150 ft. is 170 ft. and the maximum horizontal diagonal dimension above a height of 150 ft. is 200 ft. (see Figure 11, p. 24).

Off-street parking is not required for commercial uses in the C-3-0 District but, according to Section 204.5(c) of the City Planning Code, up to seven percent of the gross floor area of a building may be devoted to parking as an accessory use when no parking is required. Section 152 of the Code provides a schedule of required off-street loading spaces. On January 21, 1982, the City Planning Commission adopted Resolution No. 9286 containing revised guidelines for off-street loading requirements.

Cumulative Office Development Downtown

Existing office space in San Francisco totals about 57.2 million gross sq. ft. (see Table B-1, Appendix B, p. 129). About 7.8 million gross sq. ft. of office space is currently under construction. About 5.4 million gross sq. ft. has been formally approved but is not yet under construction, and an additional 4.2 million gross sq. ft. of office space is under formal review. Together these total 17.4 million gross sq. ft. of new office space. About 1.3 million gross sq. ft. of existing office space has been or is proposed to be demolished to clear the sites for these office developments. This results in a net addition of 16.1 million gross sq. ft. of new office space in Downtown San Francisco. For analysis purposes, the 16.1 million gross sq. ft. of net new space is used, for it refers to the



LEGEND


- C-3-G Downtown General Commercial District
- C-3-O Downtown Office District
- P Public Use District
-  Project Location



FIGURE 10: Planning Code Use Districts

SOURCE: San Francisco Planning Code



LEGEND


Height and Bulk Districts	Height Limit	Height Above Which Maximum Dimensions Apply	Maximum Building Length	Maximum Diagonal Dimension
450-I	450	150'	170'	200'
400-I	400	150'	170'	200'
320-I	320	150'	170'	200'
300-H	300	100'	170'	200'
160-H	160	100'	170'	200'
88-X	88	Bulk Limits Not Applicable		
OS	Conformity with Objectives , Principles and Policies of the Master Plan			
	Project Location			



FIGURE 11: Planning Code Height and Bulk Districts

SOURCE: San Francisco Planning Code

III. Environmental Setting

amount of new construction in excess of existing space on each site in terms of gross sq. ft. of floor space. If these projects were all completed, San Francisco would have a total of approximately 73 million sq. ft. of office space.

The above numbers and the cumulative analyses in this report are based on a list of office buildings, prepared by the Department of City Planning, which on August 6, 1982 were in one of three categories: 1) under formal review by the Department of City Planning; 2) approved but not yet under construction; and 3) under construction. These buildings and the total sq. ft. of office and retail space in each category are listed in Appendix B, Tables B-2 and B-3, pp. 131-134.

The cumulative list contains only those buildings which are, or have been, formally under review by the Department of City Planning and the Department of Public Works, or for which plans are well defined. Not included are projects which are in an early planning stage but for which details as to types of use and floor areas of office and retail space are not available. Thus excluded are buildings in the Yerba Buena Center Redevelopment Area, Mission Bay of the Southern Pacific Land Company, the Rincon Hill-South Beach Redevelopment Area, and unfunded State and Federal office building proposals. The cumulative list does contain those office buildings in the Yerba Buena Center Redevelopment Area which are under construction or for which Land Disposition Agreements have been approved, and which have definitely identified floor area figures. The San Francisco Redevelopment Agency is currently considering a range of additional amounts of office space, but the nature and scale, including floor area, are tentative and uncertain. Therefore, potential office space in Yerba Buena Center is not included. The general basis for future development will be in accordance with the Yerba Buena Center Redevelopment Plan as amended. Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. The reason for this methodology is more fully explained in Appendix F, p. 164. See also notes to Tables B-2 and -3.

The totals indicated in Table B-3 may differ from those shown in earlier EIRs as they are based on the status of projects as of August 6, 1982. Some projects included in earlier totals have been removed from the cumulative impact analyses because they have been withdrawn from formal review or for other reasons of inactivity. On the other hand, some projects not included in earlier totals have been added to the cumulative totals because

they have been activated. In sum, the lists used for the cumulative analyses in this report represent to the extent practicable the most current official record of office buildings completed, in progress, or in the review process.

This discussion of cumulative development describes in static terms a fluid situation. The environmental setting is in a constant state of flux and transition.

B. URBAN DESIGN

DESIGN

The project site is occupied by a four-story brick building with a 120-ft. tall clock tower (see Figure 12, p. 27). The existing structure did not receive a rating in the survey conducted by the Foundation for San Francisco's Architectural Heritage, nor is it included in the City Planning Commission's list of Architecturally and/or Historically Significant Buildings in the Downtown. The clock tower is reputed to be a replica of the clock tower of Independence Hall in Philadelphia. The site slopes up moderately to the west and contains no distinctive topographic features (see Figure 13, p. 28). There are street trees in sidewalk planters along the Kearny St. and California St. frontages, and shrubs in wooden boxes outside windows at the ground floor.

The project block, bounded by California, Kearny, Sacramento and Montgomery Sts., contains buildings at a variety of scales, providing visual contrast in the site vicinity. Large mid-rise office structures are located on the southern portion of the block (a 13-story building at 550 California St. and a 15-story building at 405 Montgomery St.). Smaller-scale development (ranging from 3 to 10 stories) occupies the northern portion of the block along Sacramento St. South of the site, across California St., is the 52-story Bank of America Building and plaza. A major change in topography occurs west of Kearny St. as the slope of California St. increases to the top of Nob Hill.

The site is in the northwest corner of the downtown office district and situated at the intersection of two major streets that run through the Financial District. Mid- to high-rise office buildings dominate the vicinity. North of the site, Kearny and Sacramento Sts. serve as a transition between the taller office developments of the Financial District to the east, south and northeast, the low- to moderate-scale structures of Chinatown to the west, and the Jackson Square Historic District to the north.



▲ 650 California St. 600 California St. Fireman's Fund Building - 580 California St. Spring St. 550 California St. ▲

FIGURE 12: View of Site - California Street Frontage

SOURCE: Environmental Science Associates, Inc.



▲ 550 Kearny St.

▲ Fireman's Fund Building
580 California St.

▲ 550 California St.

▲ 401 Montgomery St.

FIGURE 13: View of Site from California and

Old and new developments are interspersed in the Financial District, providing a mix of architectural styles and textures. On California St., buildings are generally built out to the property lines (with the exception of the Bank of America plaza opposite the site and plazas at 50 California St. and 101 California St.), establishing a continuous street facade with a strong sense of spatial definition. Retail uses are few on California St. in the site vicinity; lobby areas and branch banks occupy the ground floor of most structures. Most buildings along Kearny and Montgomery Sts. have ground-floor retail uses.

SHADOWS

Light and shadow patterns on nearby streets and sidewalks are cast primarily by nearby high-rise structures. The buildings producing major shadows in the area include the Bank of America Headquarters Building (555 California St.), 650 California St., and the Liu Chong Hing Bank Building (601 California St.). Shadows from the existing structure on the site are confined to nearby street segments and the lower portions of adjacent buildings.

WIND

Wind conditions in San Francisco are a determinant of pedestrian comfort on sidewalks and in other public areas. In the Downtown, flat-walled buildings can funnel wind flows into narrower areas, increase air turbulence, and divert winds downward to street level.

West, southwest and northwest winds are the most frequent and strongest winds during all seasons in San Francisco.^{1/} (In meteorology, a west wind blows from the west.) The most frequent wind direction during most months is west; on an annual aggregate basis, west winds blow nearly half of the time. West winds are also the strongest, averaging over seven miles per hour year-round. Southwest winds are typically the second most frequent and second strongest winds. Northwest winds have had the second highest average speed during some years.

Average wind speeds are highest during the summer and lowest during the winter. The strongest peak winds occur, however, during the winter when average speeds for one hour of 27 miles per hour or more have been recorded. The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning. Peak winds are distributed evenly throughout the day.

Section IV, Environmental Impacts, p. 56, contains a description of the wind flow patterns surrounding the project site.

NOTES - Urban Design

/1/ This discussion of wind speeds and directions is based on: U.S. Weather Bureau data, collected at 460 California St. near Montgomery St.; and Bay Area Air Quality Management District data, collected at 939 Ellis St. near Van Ness Ave., about 1.2 miles southwest of the site.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

EMPLOYMENT

Site History/1/

Since about 1959, the 580 California St. Building has served as the San Francisco branch office of the Fireman's Fund Insurance Company, which is headquartered at 3333 California St. Over the years, branch operations outgrew the space at 580 California St., requiring that several branch departments relocate to other offices in downtown San Francisco. To consolidate all branch offices into one location, Fireman's Fund leased space in the One Market Plaza building to accommodate existing and future office space needs for branch operations. Beginning in 1979, branch employees began moving into offices at One Market Plaza; all branch employees will be located in One Market Plaza by the end of 1982.

The Fireman's Fund headquarters offices at 3333 California St. will move to Novato, in northern Marin County, beginning in October 1982. Relocation of the branch and headquarters offices is not a result of the proposed project; each move is for the purpose of consolidating operations.

On-site Employment

Approximately 225 Fireman's Fund employees currently work at the project site./1/ All employees are office workers; no retail space exists in the building. About 80% of the total building floor area is currently occupied. The remaining 20% of floor area is vacant due to employee relocation. The 225 employees will move to either the One Market Plaza Building or the Novato offices by the end of 1982.

SAN FRANCISCO AND REGIONAL OFFICE SPACE MARKET

Existing and Proposed Office Space

San Francisco is the major office center in the Bay Area with approximately 57.2 million gross sq. ft. of office space (see Table B-1, Appendix B, p. 129).^{2/} During the 1970s, space in downtown office buildings was added at a rate of about 1.5 million sq. ft. per year. In 1981 and 1982, the average rate of office space additions was about two million gross sq. ft. annually. Office buildings with a total space of approximately 32.3 million sq. ft. were constructed between 1960 and 1981.^{2/}

Vacancy Rates/Commercial Rents

Based on a 1981 survey of about 290 buildings, the San Francisco Building and Owners Association (BOMA) reports a citywide vacancy rate of 1.04%.^{3/} According to a June 1982 Coldwell Banker survey, the vacancy rate in downtown San Francisco office buildings (new, existing and major renovations) was 3.4% between March 31, 1982 and June 30, 1982.^{4/} The 3.4% rate is an increase from 0.1% during the same period in 1981 and is the highest that has been reported since Coldwell Banker started this survey in 1978. The current 3.4% vacancy rate is the fourth lowest in the nation among major downtown financial districts.^{4/} For comparison, the June 30, 1982 vacancy rate is 6.9% nationally; 6.4% for Chicago; 2.6% for downtown Manhattan; and 3.9% for Dallas.

Grubb and Ellis reports an August 1982 downtown vacancy rate of 10% for first-class office space of 25,000+ sq. ft.^{5/} The Coldwell Banker and Grubb and Ellis vacancy rates are not directly comparable, as each survey includes different numbers and types of buildings. Both surveys, however, indicate an upturn in the downtown office vacancy rate. The recent, short-term increase in the downtown vacancy rate does not represent a historical trend, and may be attributable to several factors, including an increase in the amount of available office space (due to new space being completed and space available for sublease), a short-term decrease in the demand for office space, and the national economic recession.

One effect of the historical shortage of office space in San Francisco has been to stimulate office development and increase demand for existing office space elsewhere in

the Bay Area. Some businesses move their clerical, support, and non-corporate functions to outlying areas while maintaining headquarters and main branch offices in San Francisco. The City of Oakland and San Mateo and Contra Costa Counties, in particular, are experiencing increased demand from businesses relocating from San Francisco. For example, approximately 6.0 million sq. ft. of office space in nine new buildings are currently proposed for construction in the City of Oakland over the next 10 years./6/

Due to historically high demand, annual rents for commercial office space in the downtown Financial District have almost tripled in the last decade (from \$8.50 per sq. ft. in 1970 to \$23 per sq. ft. in 1980)./7/ High quality, new space currently leases for \$25 to \$35 per sq. ft. annually./8/ Current rents in older buildings in the Financial District are less expensive, averaging between \$10 and \$15 per sq. ft. Existing, converted and rehabilitated commercial office space located South of Market rents for between \$12 and \$15 per sq. ft.; new South-of-Market office space will rent for about \$23 per sq. ft./9/ San Francisco rents of \$25 to \$35 per sq. ft. are now about 35% higher than commercial rents in Oakland (\$17 to \$20 per sq. ft.); the Peninsula (\$18 to \$22 per sq. ft.) and Contra Costa County (\$18 to \$20 per sq. ft.)./8,9/ Should the recent rise in vacancy rates continue, current and future commercial rents would be expected to decline proportionately in San Francisco and outlying areas.

HOUSING

Both regional and San Francisco housing stock are characterized by low growth rates, low vacancy rates, and high purchase and rental costs in relation to typical wages paid. This combination of factors and high mortgage costs have tended to constrict the supply and affordability of housing in San Francisco.

San Francisco had about 322,000 housing units as of the end of 1980; about two-thirds of the housing stock is rented and one-third is owner occupied./10/ The number of new single- and multiple-housing units in San Francisco (authorized by building permits) decreased 34.4% between 1979 and 1980./11/ The average 1980 market value of a single-family house was \$140,000 in the Bay Area and \$148,000 in San Francisco./12/ The 1980 Census reports a 1980 median value of \$104,600 for single-family units (not including condominiums), and a vacancy rate of 0.6%./13/

FISCAL

Property Tax Revenues

The site has a 1981-82 assessed valuation of about \$4.6 million./14/ Based on the 1981-82 non-bond tax rate of \$1.00 per \$100 of assessed valuation, the site will generate approximately \$46,170 in total non-bond property tax revenues this fiscal year. The largest portion, \$36,660 or 79%, will be distributed to the City and County of San Francisco; about \$6,465 to the San Francisco Unified School District; \$90 to the Bay Area Air Quality Management District; and \$2,955 to BART./15/ The existing site will also generate a total of \$8,800 to retire bond debts, based on the 1981-82 bond payment rate of \$0.19 per \$100 of assessed valuation./14/

Business Taxes

Fireman's Fund Insurance Company, by State Constitution Article XII, 14-4/5, is exempt from paying local business taxes (payroll, gross receipts and utility taxes). Instead of local business taxes, Fireman's Fund pays an in-lieu premium tax to the State Department of Insurance, which distributes the monies directly to the State General Fund./15/ The City and County of San Francisco receives a portion of the in-lieu premium tax revenue indirectly from the project site because portions of the State General Fund are reallocated back to the City and County. The amount of this revenue cannot be reliably estimated.

Costs and Net Revenues

The City incurs costs in serving the existing buildings. Police, fire and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement, and traffic control costs are supported by other revenue sources such as fees, fines, and federal and state aid, which have been declining.

NOTES - Employment, Housing and Fiscal Factors

/1/ William Newberry, Manager, Real Estate Department, American Express Company, telephone communication, April 28, 1982. (Fireman's Fund Insurance Company is a wholly owned subsidiary of American Express Company.)

III. Environmental Setting

/2/ San Francisco Department of City Planning, "Major Office Building Construction in San Francisco, As of August 1, 1982, In Gross Square Feet"; and "Cumulative Office Development in Downtown San Francisco As of August 6, 1982"; and "Gross Square Feet of Cumulative Office and Retail Development in Downtown San Francisco as of August 6, 1982". See Appendix B, Table B-1, Table B-2 and Table B-3, pp.129-134. Buildings on these lists are located in the C-3 district, the Van Ness corridor west to the Central Freeway, the South of Market area south to the Central Freeway, Division Street, Mission Creek, and China Basin, and the northeastern waterfront below Telegraph Hill.

/3/ Elmer Johnson, Director, Buildings and Managers Association, telephone communication, May 6, 1982.

/4/ Coldwell Banker, "Office Vacancy Index of the United States," June 30, 1982. San Francisco vacancy rates are part of a national survey of 24 major downtown districts conducted quarterly. A copy of the June 30, 1982 survey is on file and available for public review at the Office of Environmental Review, 450 McAllister St., Fifth Floor.

/5/ William J. McCubbin, Senior Vice President/District Manager, Grubb and Ellis, telephone communication, September 7, 1982.

/6/ City of Oakland, Department of City Planning; "Major Buildings in the Central District," January 26, 1982.

/7/ Department of City Planning Memorandum to the City Planning Commission, "South of Market Interim Controls," January 26, 1982.

/8/ Derek Morris, Leasing Agent, Cushman and Wakefield, telephone communication, May 7, 1982; Valerie Miles, Senior Broker, Coldwell Banker, Oakland Office, telephone communication, April 23, 1982; and Jeffery Nebel, Leasing Agent, Coldwell Banker, telephone communication, April 30, 1982.

/9/ Assuming that demand remains relatively constant, rents in outlying areas are expected to increase in 1983 and 1984 as new space comes on line. One reason for the comparatively low rents in outlying areas is the lack of competitive space available. For example, new buildings in Oakland are expected to lease for \$24 per sq. ft. in 1983, which will be comparable to rent for new buildings in the South of Market area. (Valerie Miles, Senior Broker, Coldwell Banker-Oakland Office, telephone communication, April 23, 1982.)

/10/ Michael Estrada, Planner, Department of City Planning, telephone communication, April 30, 1982; and Department of City Planning, Residence Changes in the San Francisco Housing Inventory, 1978, September 1979.

/11/ Real Estate Research Council of Northern California, Northern California Real Estate Report, vol. 33, No. 1, April 1981.

/12/ Security Pacific Bank, "Monthly Summary of Business Conditions - Northern Coastal," March 31, 1981, p. 2.

/13/ Dean Macris, Director of Planning, Department of City Planning, Memorandum entitled "1980 Census Information," March 25, 1982.

/14/ San Francisco Controller's Office.

/15/ City and County of San Francisco, Tax Collectors Ruling No. 2; and Levy LaCuesta, Bureau Supervisor, State Department of Insurance, telephone communication, May 6, 1982.

D. TRANSPORTATION

TRANSIT

The downtown area is served by electric trolley, diesel bus, light-rail vehicle and cable car lines of the San Francisco Municipal Railway (Muni). The California St. cable car line runs past the site and the 15-Third bus line travels on the Kearny St. and Montgomery St. frontages of the project block. Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) at the Montgomery Station on Market St. four blocks south of the site and by the Alameda-Contra Costa (AC) Transit District buses from the Transbay Transit Terminal. Peninsula service is provided by the Caltrans Peninsula Train (Southern Pacific Transportation Company) from the terminal at Fourth and Townsend Sts. and by the San Mateo County Transit District (SamTrans), which has bus routes and stops along various streets in the area, including Montgomery St., and transfer connections at the Daly City BART Station. The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to Marin and Sonoma Counties from a.m. stops on Battery and First Sts. near Market St., and p.m. stops on Pine and Sansome Sts. Golden Gate Transit also provides ferry commute service to terminals in Larkspur and Sausalito from the Ferry Building; Harbor Carriers, Inc. provides service to Tiburon. Golden Gate Transit operates a van-pooling program to North Bay areas. There are currently about 70 van pools commuting to San Francisco from Marin and Sonoma Counties; most of these commute to the Financial District. A car pooling program, RIDES for Bay Area Commuters, provides leasing and matching services for establishing van and car pools. Independently owned and operated jitneys provide additional transit service on Mission St. during the peak commute hours.

Muni

California, Kearny, and Montgomery Sts., which form the southern, western, and eastern boundaries of the project block, are Transit Preferential Sts. on which the flow of Muni vehicles is to be expedited. Kearny and Montgomery Sts. are also designated Transit Arterial Streets./1,2/ California St. is a cable car route (line 61). Peak-hour headways between cable cars on California St. (outbound or inbound) are now about 5-6 minutes; average peak-hour headways on the 15-Third bus line on Kearny St. (northbound) and Montgomery St. (southbound) are 4 minutes./3/ On Sacramento St., the 1-California bus line operates with 3-minute headways during peak hours./3/

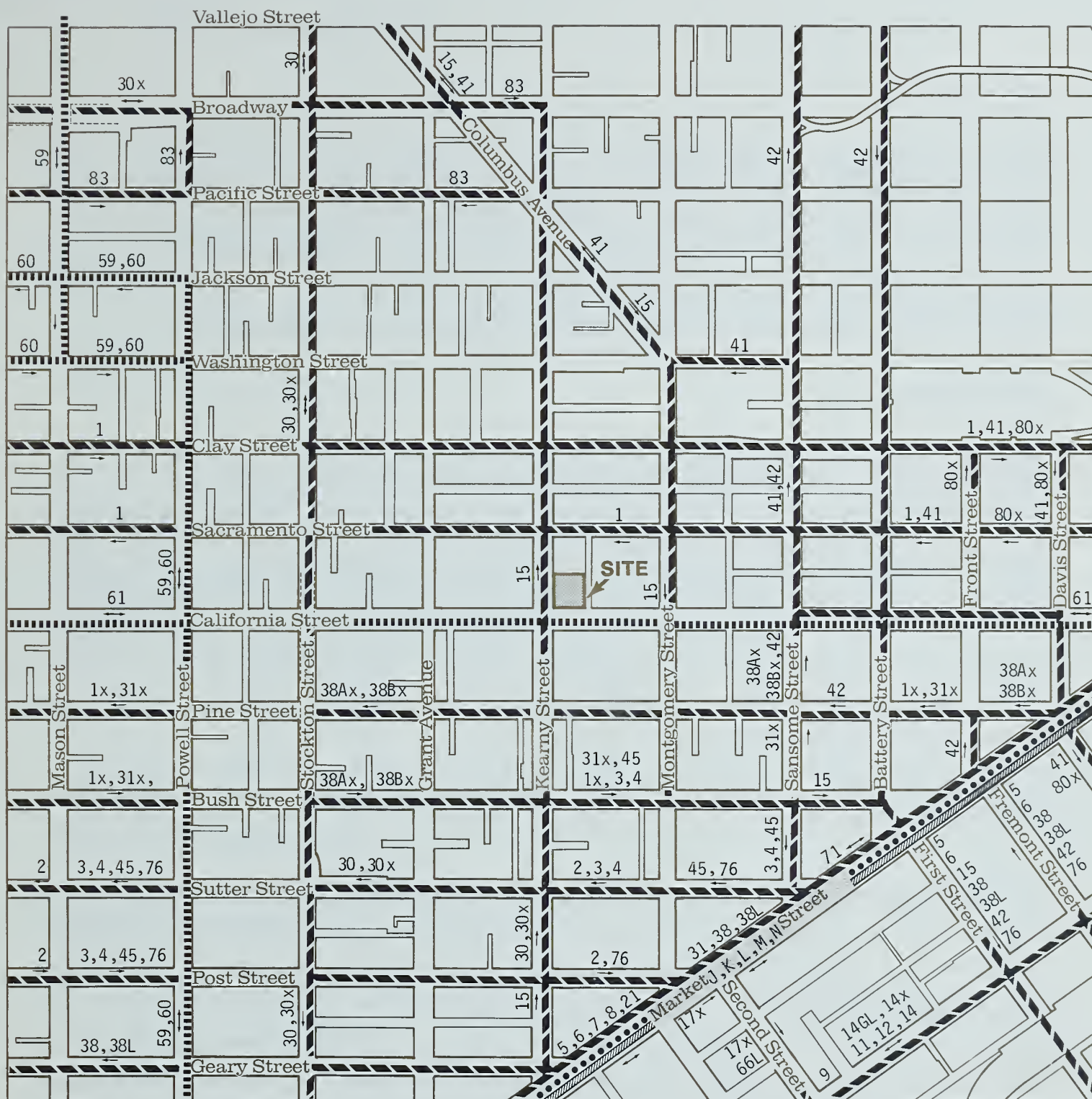
III. Environmental Setting

Muni has plans to increase the capacity of its downtown service in several ways. Twenty-two additional light rail vehicles (LRVs) are on order for use in the Muni Metro System. Construction of a loop to replace the existing stub-end terminal at The Embarcadero is planned, with a possible surface extension on The Embarcadero; implementation is partly contingent upon federal funding, which has not yet been secured. Also planned is the introduction of 50 to 100 articulated buses with a capacity 50% larger than conventional buses. Procurement efforts on the new buses began in September 1982. Further integration of BART into the downtown transit system is scheduled for implementation in November 1982, when Muni Fast Passes will be accepted for travel on BART trains within San Francisco. System-wide capacity is planned to be increased 19% by 1991./4/ The increase in capacity is planned to approximately match the increase in demand, so that present operating conditions, such as excessive crowding on some vehicles, are not expected to improve.

The project site, four blocks north of Market St., is well located for access to transit lines (see Figure 14, p.37). All Muni Metro Light Rail Vehicles (LRV) and BART lines serve the site from the Montgomery subway station on Market St. Thirty-eight Muni bus and trolley lines stop within 2,000 ft. (walking distance) of the site. The Transbay Terminal and the Ferry Terminal are seven to eight blocks away and can be reached via the 15-Third line on Montgomery St. and the California St. cable car line, respectively. Bus service to the Southern Pacific Depot is available within two blocks via Routes 41, 42 and 15.

Muni has established maximum recommended passenger loadings (a load factor of 1.0) that are used as a basis for scheduling peak-hour trips on each route, which are equivalent to 150% of seated capacity. Loading in excess of the recommended maximum increases passenger loading time, reduces schedule adherence, and provides a low level of passenger comfort. Figures F-1 to F-3, Appendix F, pp.169-171, show peak-hour conditions on several congested Muni lines and Table F-2, p.167, summarizes conditions on Muni lines in the area.

The Muni Five-Year Plan outlines a program for integrating Muni and regional service. Programs for improving route structures, collection procedures, and regional transfer coordination are planned which would increase the percentage of non-San Francisco residents (presently 10%) making use of Muni. These programs would primarily affect trips to non-downtown locations and the other eight Bay Area counties./5/



LEGEND



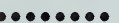


-  BART and Muni Metro Station
-  BART Route
-  Muni Metro Subway
-  Surface Bus Route
-  Cable Car Route
- 1,2,3,J,K Route Designation
- Direction of Transit Vehicle Travel



FIGURE 14: Muni and BART Routes in the Project Area

SOURCE: Environmental Science Associates, Inc., using San Francisco Municipal Railway Interim Map, January, 1982

Other Carriers

SamTrans and BART exceed their seated capacities during peak hours, but operate at less than 100% of total capacity. The other regional carriers operate during peak hours at less than 100% of their seated capacity, although some routes experience loadings in excess of seated capacity from 5 to 30 minutes during the peak hour. On most systems, peak demand is more intense during the p.m. peak period than the a.m. peak period.

PEDESTRIANS

Existing noon-hour pedestrian traffic volumes on California St. and Kearny St. sidewalks at the project site, and in crosswalks across these streets at their intersection, are in the range of 1.0 to 2.0 persons per minute per foot of effective sidewalk or crosswalk width. The sidewalks operate at about five to ten percent of capacity in an unimpeded condition. Of the crosswalks at the intersection of California and Kearny Sts., the most nearly congested are the eastern and the southern, which operate at about 50% of capacity during the noon peak hour. Pedestrian traffic during the p.m. peak-hour is generally lighter than during the noon hour./6/

VEHICLES

Including the two cable car lanes, California St. operates with four traffic lanes and is a two-way street. Kearny St. is one-way northbound and has four lanes in its approach to California St. Through movements at the intersection of these two streets now operate with volumes at about 40% of capacity during the p.m. peak hour on California St. and 70% of capacity on Kearny St., and are therefore not delayed (see Appendix F-1, p. 165)./7/ Turning movements at the intersection conflict with pedestrians in crosswalks, however, and vehicles encounter some delay. Drivers making the right turn from Kearny St. (northbound) onto California St. encounter delays, as they have less than half of the green signal indication to complete turns because of conflicts with pedestrians in the east crosswalk.

PARKING

Within a walking distance of about 2,000 ft. from the site are approximately 16,700 off-street public parking spaces./8/ Four lots with a total of about 800 spaces would be

III. Environmental Setting

removed by projects presently under formal review: Columbus/Pacific Savoy, 388 Market St., 333 Bush St. and 71 Stevenson St. When the accumulation of parked vehicles in the garages in the project vicinity reaches its peak at late morning or early afternoon, only about 690 spaces (4%) are vacant in the entire area. Vacant spaces are not immediately found and filled by drivers seeking to park, so there is a de facto vacancy rate of a few percent, regardless of the extent to which parking demand exceeds the supply. It may be stated that essentially no opportunity exists to increase the number of parked vehicles in public parking garages in the area.

At the project site, a red curbside zone is in effect on California St. extending about 70 ft. east of the Kearny St. corner. In the remaining curbside space west of Spring St. are three metered spaces, subject to a 4-6 p.m. tow-away zone. On Kearny St. at the site are two metered spaces in a yellow (loading) zone; the remaining curbside space at the corner is used as a far-side stop for Muni's 15-Third bus line. Parking on Spring St., the alley which forms the eastern boundary of the project site, is prohibited.

NOTES - Transportation

/1/ Transit Preferential Streets are streets where interference with transit vehicles by other traffic should be minimized. Transit Arterials are routes of major arterial transit lines. (Transportation Element of the Comprehensive Plan, adopted by the City Planning Commission, April 27, 1972)

/2/ Transit preferential measures specified in the San Francisco Municipal Railway, April 1980, Five Year Plan: 1980-85, are as follows:

- 1) creation and enforcement of exclusive transit lanes;
- 2) synchronization of traffic signals with the speed of transit vehicles rather than the speed of automobiles, and the use of signal devices which can be preempted by transit vehicles;
- 3) extension into the street of sidewalk curbs at bus stops so that buses may pick up passengers without having to leave and re-enter the lane of travel; and
- 4) enforcement of traffic and parking regulations which facilitate the movement of transit vehicles.

/3/ San Francisco Municipal Railway, January 27, 1982, Guide to Frequency of Service.

/4/ San Francisco Municipal Railway, 1982, Rehabilitation and Replacement Plan.

/5/ Information to be found in the Municipal Railway Five-Year Plan: 1981-86.

/6/ This discussion is based on observations made between 4:30 and 5:30 p.m. on Thursday, April 8, and on Wednesday, April 14, 1982. Observations were also made between 12:00 and 1:00 p.m. on Monday, April 12, 1982. The analysis follows methods described in the book Urban Space for Pedestrians, by Boris Pushkarev and Jeffrey Zupan.

III. Environmental Setting

/7/ This discussion is based on observations made Wednesday, April 14, 1982. The estimates of capacity consider the existing signal timing on each approach.

/8/ The parking inventory survey was conducted on November 5, 10, 13 and 17, 1980, and January 20-23 and 26, 1981 (all weekdays) between the hours of 10:00 a.m. to noon and 1:00 to 3:00 p.m. by TJKM, Transportation Consultants.

E. AIR QUALITY

The nine-county San Francisco Bay Area Air Basin is designated by the California Air Resources Board (CARB) as a nonattainment area for ozone and carbon monoxide (CO); the air basin is also a nonattainment area for total suspended particulate (TSP),/1/ but San Francisco County meets the TSP standards./2/ (Total suspended particulates can be a problem around construction sites, causing a "spot" violation of the standards, without causing the standard to be exceeded for a particular county or air basin.) As required by the Federal Clean Air Act Amendments of 1977, a regional Air Quality Plan has been adopted which establishes control strategies to attain and maintain the various standards by 1987./3/ These strategies include stationary and mobile source emission controls and transportation improvements to be implemented by the Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), and the CARB.

The BAAQMD operates an air quality monitoring station approximately 2.3 miles to the south of the site at 900 23rd St. A three-year summary of the data collected and the corresponding ambient air quality standards are shown in Appendix G, p.176. These data show occasional excesses of the most stringent ozone, CO, TSP, and nitrogen dioxide standards.

Highest annual pollutant concentrations in San Francisco, while exhibiting fluctuations due to variations in meteorology, have shown an overall improvement during the 1971-1980 period./2/ No similar trend in the annual number of standards excesses is evident. Such excesses are infrequent.

San Francisco's air quality, in general, is the least degraded of all the developed portions of the Bay Area. Because of the prevailing westerly and northwesterly winds, San Francisco is more a generator of its own air quality problems (especially CO and TSP) and a contributor to those in other parts of the Bay Area (especially ozone), than a recipient of pollutants from elsewhere. This is because CO and TSP concentrations reflect local

emission sources and concentrations are highest at the source and decrease as the pollutants are dispersed by wind. In contrast, ozone is not directly emitted but is a secondary pollutant formed in the atmosphere by a complex series of photochemical reactions involving emitted hydrocarbons and nitrogen oxides. Ozone air pollution is thus a regional phenomenon because the precursor pollutants are carried downwind as the reaction process occurs.

NOTES - Air Quality

/1/ A nonattainment area is one in which the federal ambient air quality standard for the designated pollutant has been exceeded within the past two to three years.

/2/ Paul Brand, Information Officer, BAAQMD, telephone communication, August 11, 1982.

/3/ Association of Bay Area Governments (ABAG), BAAQMD, and Metropolitan Transportation Commission, July 1982, 1982 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan.

F. ENERGY

Electricity and natural gas are provided to San Francisco by Pacific Gas and Electric Company (PG&E). New demands for electricity in northern California will be met primarily from coal, nuclear, and hydroelectric sources. Co-generation and additional geothermal power development will also be used to supplement existing supplies. Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pump Storage hydroelectric plant. Both projects are expected to have their first units come on line in December 1982 (Diablo Canyon must first receive an operating permit from the Nuclear Regulatory Commission). PG&E also anticipates increased purchases of electricity from other utilities. This power is expected to come from surpluses generated by hydroelectric and nuclear plants in Washington State. These surpluses are uncertain due to the recent cancellation of plans for two of the five Washington Public Power Supply System nuclear plants and the delay in construction of another, as well as long-term increased local demand for energy in the Pacific Northwest./1/

The City of San Francisco presently generates sufficient electricity for its own uses through the Hetch Hetchy system; this power is sold to and distributed by PG&E. Two additional hydroelectric projects and four expansions are proposed by Hetch Hetchy for

III. Environmental Setting

the Tuolumne and Clavey Rivers. In the next several months, Congress is expected to consider granting Wild and Scenic River status to the Tuolumne River; passage of such an Act could prevent the construction of several of these hydroelectric projects.

The Fireman's Fund Insurance Building, containing a total of about 82,000 sq. ft., was constructed in 1950, before present state energy standards were implemented. In 1981, energy consumption was about 758,000 kilowatt hours (KWH) of electricity and about 21,000 therms of natural gas, for a total of about 10 billion Btu at-source./2,3/ This represents a total consumption of approximately 155,000 Btu at-source per sq. ft. per year.

NOTES - Energy

/1/ Future Generating Facilities and Changes to Existing Facilities (Form R-6), Pacific Gas and Electric Company, April 1, 1982.

/2/ Sandra Nelson, Assistant to William F. Newberry, Manager Real Estate, American Express Company, letter communication January 27, 1982, and William F. Newberry, letter communication, January 19, 1982.

/3/ Btu, British thermal units, a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy.

IV. ENVIRONMENTAL IMPACTS

An Initial Study of the proposed project was published April 23, 1982, and a determination was made that an Environmental Impact Report (EIR) was required. Issues that were considered to require no further discussion as a result of the Initial Study include: land use compatibility; project visibility; operational noise; construction-related air quality; public services and utilities; biology, geology and hydrology; health hazards; and cultural and historic factors. Therefore, this EIR does not discuss the above issues. The Initial Study is incorporated herein as Appendix A, p. 127, and may be referred to for a discussion of these issues. Not all of the impacts discussed in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). They are included here for informational purposes only.

A. LAND USE AND ZONING

The project would satisfactorily respond to general objectives of the San Francisco Comprehensive Plan, and to the objective stated in Article 2, Section 210.3 of the City Planning Code, that the C-3-0 Downtown Office District play a leading national role in finance, corporate headquarters and service industries and serve as an employment center for the region. The project would be consistent with Objective 6 of the Commerce and Industry Element to support San Francisco as a "prime location for financial, administrative, corporate, and professional activity", and would respond to Policies 2 and 4 of Objective 6 of the Commerce and Industry Element to "maintain a compact downtown core" and, to provide "amenities for those who will live, work and use the Downtown." These policies will not be further discussed in the EIR. The relationship of the project to the Urban Design Element of the Comprehensive Plan is discussed in Table 3, pp. 53-55. The project would satisfactorily respond to these policies. The project would not respond to a policy of the Downtown Parking Plan or Transportation Element of the Comprehensive Plan which discourages new parking facilities in the downtown core automobile control zone. The project would not respond to a policy of the Transportation Element through the use of subsurface sidewalk space. The project would satisfactorily respond to other policies of this Element (see Section IV.D, p. 72).

The project would require demolition of one four-story structure and construction of the proposed 23-story building. The project would increase the density of development on the site, adding about 259,500 gross sq. ft. of new office space and 10,500 gross sq. ft. of retail and lobby space. The variety of uses on the site would increase; the project would replace exclusive office use in the existing building with a mixed-use (office and retail) structure. The number of office workers employed on the site would be increased by the project. In addition, pedestrian activity at the site would increase due to persons (tenants and nontenants) patronizing the ground floor retail establishments.

The 320-ft. project tower would be the maximum height permitted in the 320-I Height and Bulk District. The building length would be about 124 ft., about 45 ft. less than the maximum length of 170 ft. permitted above 150 ft. in height (the site dimensions disallow the possibility of exceeding the bulk limitations). The diagonal dimension of about 175 ft. would be about 25 ft. less than the permitted maximum dimension of 200 ft.

Gross floor area of the project would be approximately 340,000 gross sq. ft., representing a floor area ratio (FAR) of about 21.3:1. The basic FAR permitted in the C-3-0 district by Section 124 of the City Planning Code is 14:1. Under Section 127(a) of the Code, the project sponsor intends to purchase and transfer to the site about 116,000 sq. ft. of basic permitted floor area: about 69,000 sq. ft. would be transferred from Lot 16 of Assessor's Block 240 (Cahill Property - 550 Kearny St.); and about 47,000 sq. ft. would be transferred from Lot 18 of Assessor's Block 240 (Utah International Property - 550 California St.). Both of these lots are adjacent to the project site, as required by the Section 127(a) for the transfer of basic permitted floor area. The transfer of basic permitted floor area under Section 127(A) would not alter the overall development potential for the project block. The floor area increase on the project site resulting from the transfer would be directly proportional to a decrease in development potential on the adjacent parcels from which the transfer would be made. No special action would be required of the City Planning Department or Commission to permit the floor area transfer. Upon purchase of the permitted gross floor area by the project sponsor, notice of the transfer would be recorded with the deeds of all affected properties.

The proposed building foundation and subsurface parking level would extend beneath the Kearny St., California St. and Spring St. sidewalks. This would require a variance from section 155(b) of the City Planning Code, which requires every off-street parking space to be provided entirely on private property. A revocable encroachment permit, to allow the use of subsurface space beneath public sidewalks, would be applied for with the building

permit. The building foundation and parking facility would use only subsurface public space and would not interfere with utility lines beneath the streets. The Urban Design Element of the Comprehensive Plan contains Policies for Conservation which maintain a presumption against giving up street areas for private use. The project would conflict with Objective 2, Policy 9 criteria for review of proposals to release street areas, because providing parking on the project site would be contrary to the Transportation Element policy which discourages new long-term parking in the Downtown. The encroachment permit would respond to Policy 10 which permits release of street space in the least permanent manner, such as issuance of a revocable permit in preference to a street vacation. According to Section 310.1 of the San Francisco Building Code, the encroachment permit application would require approval from the Superintendent of the Bureau of Building Inspection and City Engineer. This item would be subject to review by the City Planning Commission under Master Plan referral.

The one level of subsurface valet parking would contain about 8,600 net sq. ft. (exclusive of ramps, mechanical space and elevator core area) and would accommodate about 35 passenger vehicles. The amount of proposed parking could be permitted as an accessory use for the project. Up to seven percent of the gross building floor area, about 23,800 sq. ft., could be permissible as accessory parking under Section 204.5 of the Code; this would be about 15,200 sq. ft. more than the parking area proposed for the project.

Three off-street loading spaces would be provided. The off-street loading plan would exceed the minimum requirements of Section 154(b) of the City Planning Code. The number and dimensions of loading spaces would conform to the requirements of City Planning Commission Resolution No. 9286 (three spaces, 35 ft. deep and 12 ft. wide each)./1/

Guiding Downtown Development

In July 1982, the Department of City Planning published Guiding Downtown Development (GDD), a report containing a series of regulatory proposals for managing development in downtown San Francisco. (See Section VI. for an alternative conforming with the considerations contained in GDD.) Table 2, p. 46, compares existing development controls contained in the City Planning Code, proposed changes in those requirements contained in GDD, and relevant characteristics of the proposed project. GDD proposes that the basic

TABLE 2: COMPARISON OF EXISTING DEVELOPMENT CONTROLS TO PROPOSED CHANGES CONTAINED IN GUIDING DOWNTOWN DEVELOPMENT, JULY 1982

Major Development Controls Pertaining to Project Site	Present Requirements- City Planning Code and Interim Controls	Proposed Requirements- Guiding Downtown Development	Proposed Project
Base FAR	14:1	12:1 (additional 5:1 available for housing).	21.3:1 commercial
Height Limit	320 ft.	350 ft.	320 ft.
Maximum Diagonal Maximum Length	200 ft. above 150 ft. 170 ft. above 150 ft.	Bulk dimensions based on site size; maximum ground level plan dimension is 275 ft.; maximum area of top floor is 8,100 sq. ft.; stepping of floors required between.	175 ft. above 150 ft. 124 ft. above 150 ft. Project steps in at uppermost floors. Top floor area about 22,000 sq. ft.
Incorporation of Art	Not required	Art equal to one percent of total construction cost.	None proposed.
Ground-floor retail	Not required	Retail establishments (excluding financial institutions) with not more than 2,000 sq. ft. exempt from FAR calculation. Maximum additional FAR for inclusion of retail would be 0.5:1.	6,500 sq. ft. proposed for retail and retail banking use to accommodate about three tenants on the ground floor
Recreation/Open space	Not required for commercial uses; required for dwellings	1 sq. ft. for public use per 25 sq. ft. of commercial floor area (about 7,700 sq. ft. at an FAR of 12:1).	None proposed.
Off-street loading	2 spaces for 200,001-500,000 sq. ft. of office; 0 spaces for retail use below 10,000 sq. ft. (City Planning Code Sec. 152, Table 5). Two spaces required for site.	0.1 spaces per 10,000 sq. ft. of office floor area for buildings containing more than 100,000 sq. ft., plus 1 space for retail use between 10,001 and 50,000 sq. ft. (three spaces for the site).	3 spaces provided, as recommended by the City Planning Commission Resolution No. 9284 and in GDD.
Long-term Parking	None required for commercial uses. Up to 7% of floor area allowed as accessory use.	None permitted for office uses	About 35 long-term parking spaces for commercial use.
Provision of a Transportation Broker	None required	Proposed Requirement	Transportation broker would be provided as a building management service.
Provision of Housing	None required; floor area bonuses may be used for on-site housing.	640 sq.ft. per 1,000 sq. ft. of office space, about 200 units for project; Maximum FAR equal to 5:1 on-site.	None provided on-site; sponsor providing Section 8 equity and contributing to City's Shared Appreciation Mortgage Bond Revenue Program.

SOURCE: City Planning Code; and Guiding Downtown Development, July 1982.

FAR for the project site be changed from 14:1 to 12:1 and would allow an additional 5:1 FAR for housing development. GDD would allow the transfer of development rights from non-contiguous parcels within the C-3-0 or Special Conservation Districts with architecturally and/or historically significant buildings. It does not propose changes to the Planning Code allowance of transfer of development rights from contiguous parcels which do not contain architecturally or historically significant buildings.

The project would exceed the GDD base office recommended FAR of 12:1; the project FAR would be about 21.3:1 (14:1 base and about 7.3:1 of transferred area). Bulk dimensions recommended in GDD would be determined by each individual site's dimensions; the maximum plan dimension at ground-level would be 275 ft. and the maximum floor area of the top floor would be 8,100 sq. ft. GDD would require a stepping of floors between these upper and lower maximums. The proposed building design would not conform to this provision. Under the proposed guidelines contained in GDD, the allowable height would be raised from 320 ft. to 350 ft. At about 320 ft., the project would be 30 ft. shorter than the proposed height limit.

The project would include ground-floor retail space, encouraged by GDD. Public works of art, valued at one percent of construction costs, are recommended in GDD. Art work is not currently proposed at the ground level of the project. GDD policies suggest that one sq. ft. of public open space be provided for every 25 sq. ft. of gross building floor area. If this guideline were applied to the proposed structure the recommended amount of open space would be about 13,600 sq. ft., or about 85% of the site area. The project as proposed would not include public open space, with the exception of the pedestrian arcade along the California St. frontage.

NOTES - Land Use and Zoning

/1/ City Planning Commission Resolution No. 9286 and Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," approved January 21, 1982.

B. URBAN DESIGN

DESIGN

The project would result in the demolition of a four-story office building and construction of a 23-story (320-ft. tall) office building with ground-floor retail space. The project

would be similar in scale to existing high-rises fronting California St. (see Figures 15 and 16, pp. 49 and 50), replacing a moderate-sized building with a high-rise structure (see Figure 17, p. 51).

The project would include a two-story pedestrian arcade along California St. (see Figure 18, p. 52); the arcade would provide definition to the building base and is intended by the architect to enhance human scale at street level. Ground-floor retail uses and commercial display windows would provide visual interest for pedestrians. The four corners of the building would be anchored by distinct vertical elements rising to the roofline and containing "punched" windows (set in from the line of the exterior building wall) that would be set in the granite exterior. Three columns would be positioned in the central section of each facade. Recessed between the columns would be curved, bay-style windows. The top of the project would be sloped and consists of tinted glass and wrought iron embellishments.

The Urban Design Element of the San Francisco Comprehensive Plan contains policies and principles which may be used to evaluate the proposed project with respect to its urban design implications. The relationship between applicable urban design policies of the Comprehensive Plan and the proposed project are summarized in Table 3, pp. 53-55.

SHADOWS

The project, in replacing an existing mid-rise structure, would increase shadows cast on Kearny St. and on some roofs of nearby shorter buildings. The project would not shade any nearby public parks or plazas. Most of the project shadow patterns would coincide with those cast by existing structures in the area (the Bank of America Building, 550 California St., 550 Kearny St., 600 California St., and 650 California St.). All streets and sidewalks in the site vicinity are partially shaded by existing structures during the day at all seasons of the year.

During winter, spring and fall months the project shadow patterns would generally coincide with shadows cast by nearby buildings throughout the day. No new shadow would be cast on surrounding streets and sidewalks (see Appendix C, Figures C1 and C2, pp. 137-138).

During the summer months, in the morning hours, the project shadow would add no new shadows to those cast by existing buildings on the sidewalk area on the north side of



Hartford Building

PROJECT

Liu Chong Hing Bank

Cogswell College

FIGURE 15: Photomontage Looking East
on California St.
from Cogswell College

SOURCE: Johnson Burgee Architects;
Square One Film and Video



▲
465 California St.

↑
PROJECT

▲
405 Montgomery

FIGURE 16: Photomontage Looking West
on California St.
from Leidesdorff St.

SOURCE: Johnson Burgee Architects;
Square One Film and Video



▲
Bank of America
(background)

PROJECT

▲
Liu Chong
Hing Bank

▲
Hartford
Building

FIGURE 17: Photomontage Looking South on Kearny Street from Under Portsmouth Square Bridge

**SOURCE: Johnson Burgee Architects;
Square One Film and Video**



PROJECT

SOURCE: Johnson Burgee Architects;
Square One Film and Video

FIGURE 18: Photomontage Across Bank of America Plaza

TABLE 3: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT

APPLICABLE URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
Objective 1 <u>Policies for City Pattern</u>	
1. <u>Policy 1</u> : "Recognize and protect major views in the city, with particular attention to those of open space and water." (p. 10)	The project site fronts the California St. view corridor. The project would not obstruct existing long-range views now available to the public as it would be surrounded by nearby development of similar or greater height. From distant points, the project would not be a prominent feature on the skyline. No short-range pedestrian views would be blocked by the project tower.
2. <u>Policy 3</u> : "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts." (p. 10)	The proposed project would be similar in height and bulk to existing high-rise buildings which dominate distant views of the downtown and, therefore, identify the downtown area. Together with adjacent high-rise structures, the project would define the northwestern edge of the Financial District.
Objective 2 <u>Policies for Conservation</u>	
3. <u>Policy 6</u> : "Respect the character of older development nearby in the design of new buildings." (p. 25)	The project would contrast architecturally with older development in the vicinity; however, it would repeat some design elements of nearby older buildings. The base of the building would be defined by a break in the window line at the third story and an arcade along California St., providing a sense of pedestrian scale. The facade would be traditional in form with a distinct base, central section and top.

*City and County of San Francisco, 1971, Comprehensive Plan, Urban Design Element (page references shown in parenthesis).

SOURCE: Environmental Science Associates, Inc.

TABLE 3: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

Objective 3

Policies for Major New Development

- | | |
|---|---|
| <p>4. <u>Policy 1</u>: "Promote harmony in the visual relationships and transitions between newer and older buildings." (p. 36)</p> | <p>See Item 3, above. The bay windows set between the columns, and between the columns and the end bays, would be a traditional San Francisco design element. The roof would be sloped and feature statues and wrought iron embellishments to provide visual interest and offset the blockiness of newer nearby buildings. The streetfront and building entrance along the arcade would be modern in style, while the archways of the arcade would be more traditional.</p> |
| <p>5. <u>Policy 2</u>: "Avoid extreme contrasts in color, shape, and other characteristics which will cause new buildings to stand out in excess of their public importance." (p. 36)</p> | <p>See Items 3 and 4, above. The building facade would be granite and light in color. The project would contain no reflective glass or high intensity lighting and would not impose reflective or glaring light on other properties or nearby roadways.</p> |
| <p>6. <u>Policy 3</u>: "Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations." (p. 36)</p> | <p>The proposed building would be located at the intersection of California and Kearny Sts., at the northwest border of the Financial District and along a primary view corridor into that district. The project design would reflect the character of the district as a center for office development and be similar in height and bulk to surrounding buildings. The project design is intended to provide a visual contrast to the Bank of America Building across California St.</p> |
| <p>7. <u>Policy 5</u>: "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (p. 36)</p> | <p>See Items 1 and 2, above. The project would not be a prominent feature on the city skyline. At 320 ft. tall, the proposed building would be less than half the height of the Bank of America Building (780 ft.) directly across California St. The project would be diagonally across from the Liu Chong Hing Bank, which is approximately the same height (325 ft.). Adjacent structures to the north and east, at 550 Kearny St. and 550 California St. would be about half the height of the project.</p> |

TABLE 3: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

- | | |
|---|---|
| <p>8. <u>Policy 6</u>: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (p. 37)</p> | <p>The project would be similar in bulk to other buildings in the vicinity. The bay windows separated by columns are intended to reduce the appearance of bulk, and the pedestrian arcade would add a sense of openness and establish a human scale. See Item 7, above.</p> |
|---|---|

Objective 4

Policies for Neighborhood Environment

- | | |
|--|---|
| <p>10. <u>Policy 13</u>: "Improve pedestrian areas by providing human scale and interest." (p. 57)</p> | <p>The project would feature a pedestrian arcade on California St. and ground-floor retail use to promote pedestrian interest. The building base is intended to provide street-level scale.</p> |
|--|---|

California St. west of the site. Towards noontime, the project would add new shadows on Keanry St. (see Appendix C, Figure C3, p.139). By late afternoon, the project shadow would not increase shading on any streets or sidewalks.

WIND/1/

The strongest and most frequent wind direction during most months is from the west. Southwest winds are typically the second most frequent and second strongest winds. Northwest winds have had the second highest average speed during some years. Average wind speeds are higher during the summer than during the winter, and higher in the afternoon than in the morning. Peak winds are distributed evenly throughout the day and are strongest during the winter.

Wind speeds at pedestrian level can be predicted by comparing recorded wind data with "wind speed ratios", which express pedestrian level wind speeds relative to the speed above the wakes of surrounding buildings (called the freestream wind speed).^{2/} For San Francisco, the commonly used definitions of pedestrian-level wind speed ranges are as follows (windspeed ratios are not actual wind speeds but ratios; a point having "very high" wind speed ratios could still experience light winds on a near-calm day, and a point found to have "low" wind speed ratios could experience significant winds on an extremely windy day):

<u>Wind Speed Ratio</u>	<u>Ratio of Pedestrian Level Wind Speed to Freestream Wind Speed</u>
Low	0.00 - 0.19
Moderately Low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately High	0.50 - 0.60
High	0.70 - 1.00
Very High	Greater than 1.00

Wind tunnel tests of localized wind speeds and directions at and near the project site were conducted using a scale model of the site and vicinity, and using wind tunnel adjustments known to properly model atmospheric boundary layers near the surface of the earth. The study included separate tests of west, southwest, and northwest winds under existing conditions, with the proposed project, and with an alternative building design.^{3/} Because west, southwest and northwest winds are the most common in San Francisco, they are the most representative for evaluation purposes.

West Wind

The existing near-surface wind speed ratios near the project site are low (wind speed ratios of less than 0.19) at all measured locations except for a moderately low wind speed ratio (0.22) occurring on the north side of the intersection of Kearny and Pine Sts. Portsmouth and St. Mary's Squares and the plaza north of the Bank of America Headquarters Building experience low wind speed ratios. Winds west of Kearny St. on Pine and Bush Sts. are easterly due to a large recirculating wind flow that forms on the downwind (east) side of Nob Hill. The Bank of America creates a large turbulent wake, which extends several blocks downwind.

The project would result in little change in wind speed ratios near the site; the greatest impact would be an increase of approximately 20% in westerly wind speed ratios at the intersection of Kearny and California Sts. and on the plaza north of the Bank of America, but wind speed ratios at these locations would still be low.

Northwest Wind

The existing near-surface wind speed ratios are low and moderately low at all measured locations. Two vertical vortices form at the northeast and southwest corners of the 650 California St. Building, west of the site; these vertical vortices cause a rapid acceleration of wind along Kearny St. on the west side of the site, causing a change in wind speed ratios from 0.13 at the intersection of Kearny and Sacramento Sts. to 0.44 and 0.31 west of the site.^{4/} The vortices also cause easterly winds on California Sts. west of Kearny St., in the wake of the 650 California St. Building. Portsmouth and St. Mary's Squares and the plaza north of the Bank of America experience low and moderately low wind speed ratios. The Bank of America creates a large turbulent wake which extends several blocks downwind.

The presence of the project would create a number of changes in the wind environment of the site vicinity. The vertical vortices would be formed on the south and east sides of the proposed building and would create swirling winds on California St. (just south of the proposed building). However, the street level wind speed ratios would remain about the same as now occur, i.e., low and moderately low. Wind speed ratios would increase from low to moderately low along California St. (except for one point west of the Liu Chong Hing Bank building, where the ratio increases from the moderately low level to the moderate level), and at the intersection of California and Kearny Sts. Wind speed ratios

along Kearny St. just west of the proposed building would decrease due to a change in the vertical vortices formed off of the 650 California St. Building. This effect would lessen the rapid acceleration of wind experienced under existing conditions on Kearny St. Wind speed ratios on the plaza of the Bank of America would remain about the same as at present, but the direction of wind flows would become more steady. There would be no change in the wind patterns on Portsmouth and St. Mary's Square.

Southwest Wind

The existing near-surface wind speed ratios surrounding the project site are generally low and moderately low. Winds are channelled along California St.; wind speed ratios along this street are therefore moderate and moderately high (up to a ratio of 0.50 on the northwest side of the intersection of Kearny and California Sts.). A moderate wind speed ratio (0.48) also occurs near the northwest corner of the Bank of America, where wind blowing north on Kearny St. turns east onto California St. Low and moderately low wind speed ratios occur on Portsmouth and St. Mary's Square. Two vertical vortices form from the northeast and southwest corners of the 650 California St. Building.

The project would create a number of changes in the wind environment of the site vicinity. Wind speed ratios at the intersection of Kearny and Sacramento Sts. would more than double, from low (0.13) to moderate (0.31). Street-level wind speed ratios would decrease at the intersection of Kearny and California Sts., where winds would be diverted above the street. The vertical vortices now formed from the 650 California St. building would not be present since much of the wind would be directed over the project. There would be little change in winds at Portsmouth and St. Mary's Squares and on the plaza of the Bank of America.

NOTES - Urban Design

/1/ This section is based upon a study, entitled "Wind-Tunnel Studies of the 580 California Street Building", March 1982, prepared by Dr. Bruce White as a private subconsultant to Environmental Science Associates, Inc. A copy of this document is included in this report as Appendix D, p. 140. Dr. White is Associate Professor of Mechanical Engineering at University of California at Davis. His involvement with this project was independent of the university.

/2/ Meteorological instruments used for recording the available data on wind speeds and directions in San Francisco are placed so that they essentially measure freestream wind speeds. Page 23 in Section III, Environmental Setting, provides a summary of recorded wind speeds and directions.

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/3/ The tests included (1) flow visualization tests, which placed a continuous stream of smoke at various locations to determine wind directions, and (2) hot-wire anemometer measurements of wind speed ratios and turbulent intensities at 20 surface locations on and near the project site.

/4/ A vertical vortex refers to the movement of wind in a circular motion within a small area, generally down the facade of a building.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

Direct Project-Related Employment

A projected 1,345 permanent full-time jobs would be provided by the project. Although no tenants are secured at this time, prospective tenants are anticipated to be accounting firms, corporate executives, and financial related services. Because specific tenants are unknown at this time, the projected total number of employees was derived by assuming an average number of sq. ft. per employee, by general use (see Table 4). The net increase in employment at the site, after subtracting the 225 existing jobs that would relocate from the site, would be about 1,120.

TABLE 4: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE

<u>Employment Type</u>	<u>Building Space (Gross Sq. Ft.)</u>	<u>Space per Employee (Sq. Ft.)</u>	<u>Projected Number of Employees*</u>
Office	329,500	250 ***	1,320
Retail	6,500 **	400 +	15
Building Maintenance	340,000	30,000 ++	10
TOTAL EMPLOYMENT			1,345
TOTAL EXISTING EMPLOYMENT			225
NET INCREASE ON SITE			1,120

* All numbers are rounded to the nearest five employees.

** The net leaseable retail space is used for estimating employment. The gross retail space of 10,500 sq. ft. includes lobby and circulation corridors on the ground floor.

*** San Francisco Department of City Planning, "Office/Housing Production Program - Interim Guidelines," January 1982.

+ California Office of Planning and Research, January 1978, Economic Practices Manual, pp. 35-37.

++ Highrise buildings generally employ one janitor per 30,000 gross sq. ft. (Roger Dillon, Secretary-Treasurer, Building Services Employees Union, Local 87, telephone communication, April 17, 1980).

SOURCE: Environmental Science Associates, Inc.

Indirect (Secondary) Employment

Secondary employment and income would result from permanent project employment; through the multiplier effect, each employed person would generate additional employment through demands for goods and services. Assuming that the new jobs accommodated by the project would be primarily in finance, insurance and real estate (the so-called FIRE sector), about 1,320 additional jobs in other sectors of the Bay Area economy would result from the growth of FIRE businesses. The total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 2,440 (the 1,120 project jobs plus the 1,320 jobs induced by the multiplier effect)./1/

The project would require about 795 person-years of construction labor throughout the two-year construction period. About 1,230 additional person-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction./1/

HOUSING

Citywide Housing Requirements

The project could result in an increase in downtown employment of about 1,120 net new jobs, and 1,345 gross new jobs. The Office Housing Production Program formula for calculating housing demand caused by downtown office projects assumes that 40% of (gross) new office workers would move to San Francisco and that there are 1.8 office workers per household./2/ Based on this formula, the project would result in 528 new San Francisco residents from office employment; required housing would be 293 housing units (based on 329,500 gross sq. ft. of office space, excluding the ground floor with retail and lobby areas). This formula represents the basis for the City Planning Commission's policy for requiring housing to offset demand created by office developments. Another formula, recognized by the City, projects that between 15% and 30% of the new employees would be expected to move to San Francisco./3/ Based on total new on-site office employment (not retail or janitorial), the project would generate 198 to 396 new San Francisco residents. On the assumption of 1.4 persons per household,/3/ the project would generate a demand for 141 to 283 housing units.

Housing Affordability

A substantiated analysis of housing affordability would require, first, determination of the number of households generated by the project preferring to live in San Francisco. This figure, in turn, would be related to new employment increase and residence location preference. As new office space would be primarily occupied by existing San Francisco businesses that would relocate, most new workers would be already employed in San Francisco./3/ Those project workers transferring from another place of employment within the City would not generate housing demand directly attributable to the project; thus projections of housing demand attributable to the project must subtract workers already employed in San Francisco.

New employment growth due to the project would occur as new jobs were created in older buildings that would be vacated by project employees. As tenants for the project are not known, it is impossible to predict which buildings would be vacated for the project (and which buildings would be then vacated to fill the former level of vacated space, and so on). Employee movements are dynamic; all employees new to the City attributable to the project would not be directly employed within the project. For the above reasons, it is not possible to precisely quantify new employees due to the project.

The projected regional distribution of project employees is contained in Appendix E, Table E-1, p.159. Where an employee would live is the result of individual decision-making. Such decisions are a function of location preference and housing economics. Information concerning housing preferences would be obtainable through surveys of new office workers. Preference information is complex, involving many factors such as number of bedrooms, type of neighborhood, family composition, and commute distance to work.

Assuming that the number of new employees and their preferences for housing were known, the most critical variable affecting the housing affordability analysis would be a new household's ability to pay for housing. The salary of new workers alone is insufficient to determine housing affordability; the total income of all members of a new worker's household must be known. A variety of published sources give salaries for various occupational categories, but no comprehensive data regarding the distribution of household income among office workers (or any other group of workers) exists. Citywide household income estimates based on the 1980 Census will become available during 1983, but this data source will not reflect household income of downtown office workers.

The ratio of housing expenses to income, according to the "Office Housing Production Program (OHPP) Interim Guidelines, January 1982, are 30% of household income for rental expenses and 38% of household income for home ownership expenses. The down payment for home ownership may be assumed to be between 10% and 20% of purchase cost; however, a household's ability to afford a down payment would depend on household assets and liabilities, and would vary widely for different households. Assumptions regarding mortgage interest rates must also be made. Considering the volatility of interest rates in recent years, an affordability analysis based on current market interest rates might not be relevant when the project is completed and occupied.

Quantification of project impacts on the housing market is not possible based on available published information. A study of the "Feasibility of Performing a Housing Affordability Analysis" by Questor Associates (June 15, 1982) concludes that household income of project employees, distribution of housing demand, and magnitude of new demand can only be accurately determined by surveying occupants of buildings comparable to an office project. The study states that without such detailed information, "it is not feasible to quantify with reasonable accuracy the housing affordability parameters associated with new office construction."/4/

Based on available data, an approximation of a housing affordability analysis appears in Appendix E, Table E-2, p.161. Data in the table rely on published sources of office worker incomes (not household income), and prices of housing (without regard to housing availability). Assumptions are made regarding ratio of housing expenses to income, mortgage interest rates and down payments. Analysis based on these data and assumptions indicates that most project employees would not be able to afford ownership housing in San Francisco, although a significant minority, depending on the number of workers per household, would be able to do so. Most project employees, except the lowest-paid clerical employees desiring to live alone, would be able to afford rental housing in San Francisco.

FISCAL

Revenues

The proposed project would generate about \$917,000 in total property (non-bond), payroll, sales, gross receipts and utility tax revenues to the City General Fund, which would

IV. Environmental Impact

represent a net increase of \$876,600 over revenues generated to the General Fund from the existing site.

Assessed Valuation and Property Taxes

Based on replacement costs, the project would have a fair market value of about \$50 million (in 1982 dollars). Based on the property's full assessed (or market) value, the project would generate a total of about \$500,000 in non-bond property tax revenues. From the \$1 (per hundred dollars of assessed value) non-bond property tax revenue, an estimated \$397,000 would accrue to the City's General Fund. This amount would be a net increase of about \$360,000 over existing (\$36,660) non-bond property tax revenues to the City. The project would also generate total non-bond property tax revenues of \$32,000 (\$29,000 net) to BART; \$70,000 (\$64,000 net) to the San Francisco Unified School District; and \$1,000 (\$900 net) to the Bay Area Air Quality Management District.

The building would also generate property tax revenues to be used to retire bond debts. The tax rate at which these revenues would be generated in 1985 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. The rate in 1981-82 is \$0.19 per hundred dollars of assessed value. If that were still the rate in 1985, when the building would be occupied, bond payment revenues from the building would be about \$95,000, a net increase of about \$86,000 above existing 1981-82 bond retirement revenues of \$8,770.

Payroll/Gross Receipts Tax

On August 5, 1982, the State Supreme Court ruled (City and County of San Francisco versus Farrow) that increased payroll and gross receipts taxes adopted by the Board of Supervisors (Ordinances 113-80 and 119-80) but approved by less than two-thirds of the voters in San Francisco, are constitutional and not violative of California Constitution Article XIII A.

Tenants of the proposed building would pay either the payroll or gross receipts tax, whichever is greater.^{5/} Assuming that all tenants would pay a payroll tax, a 1982 average wage of about \$25,000 for downtown office workers^{6/} and the current approval payroll tax rate of 1.5%, payroll tax revenues from the project would be about \$429,000. The owners of the project would pay a 0.3% gross receipts tax on their rental income. The estimated total annual rental income for the project would be \$9.0 million (1981

dollars). Gross receipts tax revenues therefore would be about \$27,000. Total payroll and gross receipt tax revenues would represent a net increase in payroll and gross receipt taxes generated by the site, as no local business taxes are currently generated by the existing site (see Table 5).

TABLE 5: DIRECT NET TAX REVENUES GENERATED TO THE GENERAL FUND FROM THE PROPOSED PROJECT

<u>Tax Category</u>	<u>Tax Rates (1981-82)</u>	<u>REVENUES</u>		
		<u>Existing Site</u>	<u>Proposed Project</u>	<u>Net Increase</u>
Property (non-bond)	1% of full market value	\$37,000	\$397,000	\$360,000
Payroll*	1.15% of gross payroll expenditures	exempt	429,000	429,000
Gross Receipts Tax	0.3% of total rental income	exempt	27,000	27,000
Sales***	0.125% of gross retail receipts	3,400	30,000	34,000
Utility*	0.5-0.55% of gross expenditures	exempt	34,000	30,000
TOTAL		\$40,400	\$917,000	\$876,600

*See Notes 5-9 on p. 71 for sources and assumptions used to derive payroll, gross receipts, sales and utility tax revenues.

**On-site retail sales and for employee expenditures and employee expenditures are included in the sales tax category.

SOURCE: Environmental Science Associates, Inc.

The 1.5% payroll tax and 0.3% gross receipts tax are the rates that were approved by Board of Supervisor's Ordinance 118-80 and 119-80. These rates could be increased in the future if the Board of Supervisors enacted new ordinances increasing payroll and gross receipt tax rates./7/

Sales Tax

Sales tax revenues would be generated by both employee expenditures and sales from retail uses on the site. Based on a rate of 0.125% of gross retail sales, estimated sales tax revenues accruing to the City from employee expenditures for retail goods and on-site retail sales after project completion would be \$30,000, a net increase of about \$26,600 over existing sales tax revenues generated from employee expenditures (see Table 5)./8/

Utility Taxes

General Fund revenues are generated to the City by utility taxes on water, gas, electricity and telephone. The existing site is exempt from this tax. Based on estimates of utility use, the project would generate about \$30,000 annually from utility taxes (see Table 5)./9/

Total Revenues

General Fund revenues for the City and County of San Francisco from the project would total about \$913,000, based on the tax rates and fees in effect in late 1982. General Fund revenues from the existing uses on the site totalled about \$40,000 in 1981; the project would result in about a \$873,000 net increase in General Fund revenues (see Table 5). Estimated total and net revenues accruing to the General Fund from the project site are based on 1982 tax rates and business conditions. Total revenues could change if: property tax distribution to the City and County changes in future years; payroll taxes fluctuate due to employee salaries; office and retail rents fluctuate, thereby affecting gross receipts tax, and, if costs for utilities change, particularly telephone costs, which are the largest component of the total utility users tax.

Costs

Muni

The estimated 1980-81 (most recent Muni estimate) net marginal cost (or increase in the deficit for Muni operations) per peak-hour ride is \$0.39./10/ The project would generate about 183,000 rides per year which could generate a cost deficit to the Muni of \$71,000;/11/ the deficit attributable to the existing project site is about \$12,000. After subtracting this amount (existing deficit), the project would result in a net deficit for Muni operations of about \$59,000 per year. The project would help pay for this deficit through its net revenue contributions to the General Fund and, indirectly, through sales tax contributions. (The Net Muni deficit should be compared to the net, not total, revenue contribution or of the project to the General Fund because the net amount represents the actual or residual revenues that will be available to offset project costs to Muni.) In the 1981-82 budget, 7% of Muni's revenues were appropriated from the General Fund. If this percentage were to remain constant, the project would generate about \$62,000 in General Fund revenues to Muni in 1985, which represents about 10% of the

project's total net revenue contribution to the General Fund. Based on the marginal cost figures provided by Muni, the project would more than offset the Muni deficit generated by the project through its revenue contribution to the General Fund./11/ This conclusion should be qualified because the Muni deficit-per-mile figure is based on 1980-81 data, the marginal cost is based on all rides and not peak-period riders, and the total project-related deficit is calculated using only those workers who would use Muni as their primary mode of transportation while excluding those workers who would use a combination of transportation modes, such as Muni and Southern Pacific.

Under Assembly Bill (AB) 1107, Muni is eligible to receive a portion of the revenues from the BART \$.005 sales tax, provided that one-third of its operating revenues are collected from the fare box. Effective April 1, 1982, the Muni per ride fare was increased from \$0.50 to \$0.60, primarily to meet the fare box revenue requirement of AB 1107./12/ In the 1981-82 fiscal year, about \$3,000 in transit tax revenues would be generated from the site to be distributed by the Metropolitan Transit Commission (MTC) among Muni, BART and AC Transit.

The San Francisco Board of Supervisors, on April 27, 1981, approved an ordinance (224-81) to assess new downtown commercial development to support Muni. The plan called for levying a one-time fee of up to \$5.00 per gross square foot upon construction of new downtown office space. The ordinance, currently in litigation, would contribute funds for Muni transit services, including capital improvements and operating costs./7/ Assuming the one-time fee is upheld, the project could generate up to \$1.6 million in one-time fee revenues to Muni.

On February 1, 1982 the Board of Supervisors approved by resolution a measure declaring its intent to form a Core Area Transit Maintenance District, determining that a portion of public transit is provided Downtown in lieu of public parking places, and to impose upon real property within the area an annual payment for transit maintenance based on gross floor area. The project site is within the proposed district and would be subject to the legal assessment provisions finally adopted.

On July 12, 1982 the Board of Supervisors decided to postpone acting on the assessment district plan until January 1983. This transit assessment district may no longer be applicable since both the Mayor and Board of Supervisors have withdrawn the proposal and the Mayor may intend to substitute an increase in business taxes. The business tax

increase would be in the form of a ballot measure presented to the voters; implementation would depend on voter approval (and withstanding potential legal challenges). According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth," issued by Dean Macris, Director of Planning, August 5, 1982, Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes.

BART

In the 1981-82 fiscal year, the estimated per-paid-passenger fare deficit for BART is \$1.10./13/ Based on about 94,500 rides per year, the estimated annual BART deficit attributable to the project would be \$104,000;/14/ the current BART deficit generated from the existing site is \$17,000, resulting in a net deficit of \$87,000 (\$104,000 - \$17,000). The project would generate a net total of \$41,000 (exclusive of bond repayment) in revenues to BART, including \$29,000 in net property tax revenues; and \$12,000 net revenues from the 0.5 cent BART sales tax. This amount does not include the portion of \$.005 sales tax revenue distributed among BART, Muni and AC Transit by MTC. After subtracting BART's revenues from sales and property taxes which would be generated from the project, the net fare deficit of BART would be about \$46,000.

Effective September 8, 1982, BART increased its base fare in order to increase fare-box revenues to fund the capital improvement plan. The estimated 1981-82 per-paid-passenger fare deficit will change as a result of the increase. The amount of the deficit will be determined in October 1982./13/

Costs and Net Revenues

Costs to San Francisco for providing municipal services to the proposed project are difficult to estimate. Most evidence indicates that overall costs per unit of service provided (per sq. ft. or per employee) to the new building would be lower than for the existing buildings (see Appendix E, Table E-3, p. 163). This reduction in per sq. ft. costs is primarily due to improvements in fire and security protection systems in new construction. Costs for water and sewer service would be paid through user charges.

In general, existing public facilities, equipment, and labor are adequate to serve the project. While costs for servicing the site would increase because of the larger floor space and employment, costs per unit of service would not increase, and may actually decline.

CUMULATIVE AND INDIRECT EFFECTS

Downtown Office Space

The proposed project, together with other major downtown office buildings which are under formal review (4.2 million sq. ft.); have been approved (5.4 million); and are under construction (7.8 million) would add about 17.4 million sq. ft. of office space if all were to be built (see Appendix B, Tables B-2 and -3, pp. 131-134). Subtracting 1.3 million sq. ft. of existing space that would be demolished for new buildings, a net of 17.4 million sq. ft. would be added. If all 16.1 million sq. ft. of office space were to be completed by 1990, there could be a short-term cumulative impact of oversupply while the market adjusts itself to absorb the new space. During this period commercial rents would be expected to decline, especially in the core of the downtown area and vacancy rates would rise. The number of proposed new office developments could decline if there is not sufficient demand for office space presently planned or under construction, and for office space that will become available due to existing leases that will expire. The overall effect of this slowed growth rate in downtown office development would be to relieve pressure for replacement of older buildings with new ones, and for conversion and rehabilitation of existing low-intensity retail, warehouse and industrial use with office use, most notably in the South of Market area.

Housing

The relationship between downtown office growth and housing demand in San Francisco was documented in a report prepared by Recht, Hausrath and Associates, Economists, that appears as Appendix C, pp. 289-329, of the 101 Montgomery Street EIR, certified by City Planning Commission Resolution 8941, May 7, 1981. This report is available for public review at the Office of Environmental Review, 450 McAllister Street, fifth floor, and is hereby incorporated by reference into this EIR pursuant to Section 15149 of the California Environmental Quality Act (CEQA) guidelines. In summary, this document states that relatively high wages and employment opportunities are attracting people to San

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Francisco, but many people cannot afford the high housing costs in the City. The report estimated the residency patterns of new households that would be attributable to a new high-rise office building and discussed various employment growth assumptions and their housing market implications.

Based on the total net new gross office space in San Francisco found in Table B-3, p. 134, the project would comprise 329,500 gross sq. ft. of new office space as part of a cumulative total of about 16.1 million gross sq. ft. of net new office space which is now under construction, approved, or under formal review. The project would be about 2.0% of the total new office space.

If the assumptions used and explained in the 101 Montgomery Street EIR were applied to cumulative office development, i.e., 15 to 30 percent of the new employees generated by cumulative office development would be expected to move to San Francisco and the average household would be occupied by 1.4 downtown workers, between 6,900 and 13,800 new households attributable to new office space development would add to the housing demand in San Francisco. If the assumptions used in the formula prescribed by the Office Housing Production Program (OHPP) Interim Guidelines of January 1982 were used (i.e., 40% of the new employees attracted to the new jobs created would want to live in San Francisco and the average household would be occupied by 1.8 downtown workers), about 14,300 new households attributable to new office space development would add to the housing demand in San Francisco. These projections of new households are based on 16.1 million gross sq. ft. of net new office space, which includes all projects listed in Table B-2, p. 131. The employment and housing projections shown in Table E-1, p. 159, exclude employees in existing buildings to be demolished on the sites of proposed buildings.

This impact on the housing market would be mitigated to a certain extent because various office developers, including Gerald D. Hines Interests, have agreed to provide units, through City Planning Commission final approval resolutions, or have proposed units on-site./15/ Table E-1, p. 159, shows the projected effects of downtown office development on the San Francisco and regional housing markets.

Cumulative office development would increase the City's current high ratio of jobs to housing supply. Housing demand would increase in an already tight housing market. In market situations where demand outstrips supply, prices can be expected to increase.

Factors independent of office development and outside the control of the City, for example immigration, interest rates, State and Federal tax policies, and economic trends, also influence the housing market. Quantification of the effects of cumulative office development on San Francisco housing prices is not possible.

The new demand could be accommodated through additions to the housing stock, increases in the number of office workers per household, and/or displacement of existing residents. Large additions to the San Francisco housing stock are not anticipated in the near future because the housing construction industry has declined due to high costs and interest rates. Census data indicates that the number of people per household has historically been declining. This demographic trend will probably not reverse itself in the next few years due to a variety of factors, including divorces and separations, departure of young adults from families, and the increasing proportion of elderly population. It has been suggested, although there is some dispute, that gentrification — the replacement of low-income households by more affluent ones — would occur./16/

Fiscal Considerations

Net costs of providing services to cumulative downtown development are difficult to quantify. Appendix E, Table E-3, p. 163, discusses some of the various approaches that have been attempted to address the issue of net fiscal costs of downtown development.

According to some of the studies, downtown development could result in an initial fiscal benefit. Since revenues to the City would probably increase at a slower rate than costs, due to Proposition 13 limitations on property tax increases, there could be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided. This would be the case only if no new revenue sources are found, the rate of new development declines, and proposed development is not resold at some future date.

NOTES - Employment, Housing and Fiscal Factors

/1/ Projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.18 was used for FIRE and 1.55 for construction.

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/2/ Dean Macris, Planning Director, Department of City Planning, July 20, 1981, Memorandum. The housing formula is as follows:

$$\frac{\text{Gross square feet of office space}}{250 \text{ sq. ft. per employee}} \times \frac{0.40}{1.8} = \text{number of required units}$$

/3/ The formula emerged from a study undertaken by Recht Hausrath and Associates for the 101 Montgomery Street EIR, pp.289-329. The text and the analytic methods used in the study can be found in Appendix C of the 101 Montgomery Street Final EIR, EE 80.26, certified by the San Francisco Planning Commission May 7, 1981. The formula is as follows:

$$\frac{\text{Gross sq. ft. of office space}}{250 \text{ sq. ft. per employee}} \times \frac{0.15}{1.4} \text{ to } \frac{0.30}{1.4} = \text{units of housing}$$

/4/ Questor Associates, Feasibility of Performing a Housing Affordability Analysis, June 15, 1982.

This study is on file and available for public review at the office of Environmental Review, 450 McAllister, 5th Floor.

/5/ Tax Collector's Office, Payroll Expense Tax and Business Tax Ordinances.

/6/ Bank of Canton Final EIR, EE 80.296, certified July 15, 1982.

/7/ Buck Daventhal, City Attorney, telephone communication, September 7, 1982 and Diane Barry, City Attorney, telephone communication, September 20, 1982.

/8/ Sales tax revenues were estimated as follows: 1) 1,308 employees x \$1,200 average expenditures per downtown workers x 0.0125 (sales tax rate) = \$19,620; 2) 6,700 sq. ft. of retail space x \$120 gross sales/sq. ft./year x 0.0125 = 10,050; 3) \$19,620 + 10,050 = \$29,670 total sale revenues.

/9/ Utility user's tax revenues were calculated as follows, using 1982 utility rates:

water:	1.2 million cubic ft. per year x \$0.00414 per cubic ft. x 5% tax = \$250.
gas:	8,260 therms per year x \$0.49 per therm x 5% tax = \$200 per year.
electricity:	3.4 million K WH per year x \$0.707 per K WH x 5% tax = \$12,000 per year.
telephone:	306,950 net sq. ft. x \$1.40 per sq. ft. x 5.5% tax = \$21,500.
TOTAL	\$33,950 (rounded to the nearest \$100).

/10/ Bruce Bernhard, Chief Accountant, San Francisco Municipal Railway telephone communication, August 20, 1982. The 1980-81 per-paid-passenger deficit will be revised in the 1982-83 fiscal year.

/11/ 1,346 employees x 29% ride Muni x 468 rides per year x \$0.39 deficit = \$71,245. The 29% transportation modal split is taken from the Department of City Planning, October 1980, "Guidelines for Environmental Evaluation - Transportation Impacts." The 468 rides per year assumes 260 work days per year, two rides per day, and absenteeism of 10% (vacation, holidays and sick days). Bruce Bernhard, Muni Chief Accountant, telephone communication, August 10, 1982. The average \$0.39 deficit per mile is based on 1980-81 Muni budget figures of an additional cost per ride (marginal cost) of \$0.71 and an average fare revenue per trip of \$0.32. Muni is unable to provide more recent data on cost and revenue figures per passenger. The deficit due to the project equals 1,070 employees x 29% who ride Muni x 468 rides per year x \$0.39 deficit per rider which equals \$56,636.

/12/ Bruce Bernhard, Chief Accountant, San Francisco Municipal Railway, telephone communication April 23, 1982.

/13/ Ward Belding, Senior Economic Analyst, BART, telephone communication, August 20, 1982.

/14/ $1,346 \text{ employees} \times 15\% \text{ ride BART} \times 468 \text{ rides/year} \times \$1.10 = \$103,938.$

/15/ The San Francisco Office Housing Production Program, August 19, 1982.

/16/ Report of the Citizen's Housing Task Force, San Francisco, July 29, 1982 and Berkeley Planning Associates, Displacement in San Francisco, September 2, 1980.

D. TRANSPORTATION

CONSTRUCTION TRAFFIC

Access to the construction site would be from Kearny and Spring Sts. Sidewalks on California, Kearny and Spring Sts. would be closed during the construction period for 14 to 18 months; covered walkways would be provided for pedestrians in the curb lanes of California and Kearny Sts. On Kearny St., construction may require the use of one-half of one through lane, as well as the curb lane. Right-turns from California St. (westbound) onto Kearny St. (northbound) number about 80 per hour during the p.m. peak hour and the proposed use of the Kearny St. and California St. curb lanes would not seriously affect conditions for existing traffic. Through movements on the northbound approach of Kearny St. across California St. are concentrated in the middle lane of Kearny St. because of the large number of right turns onto California St.; right turns are allowed from both the curb lane and the adjacent through lane of the Kearny St. approach. The westbound curb lane on California St. is a tow-away zone from 4 p.m. to 6 p.m.

The Muni cable car renovation project is scheduled to begin in October of 1982 and will require about two years for completion. On California St., between Kearny and Montgomery Sts., a 22-foot wide trench across both lanes occupied by cable car tracks will be excavated to a depth of about 15 ft. Underlying sewage and water mains will be replaced and the entire street will be resurfaced from curb to curb. On the project block, the cable car rehabilitation work will require about three months. Scheduling will be determined by the contractor, to be chosen in November. The cable car renovation plans provide for leaving one traffic lane open in each direction on California St., along either side of the trench. The use of all, or even a portion of, the curb lane for a temporary

sidewalk during project construction may, therefore, not be an allowable use of the remaining street width. The Department of Public Works would rule on sidewalk closure and permitted uses of the curb lane for a temporary sidewalk. Further, the intersections of California St. with Kearny and Montgomery Sts. would be partially closed during some portion of the Cable Car renovation work period./1/

Figure 9, p.21, shows the location of projects under construction, approved and proposed in the project vicinity. The 550 Kearny addition is under construction next to the project. Cumulative impacts from the project and other buildings under construction would be from overlapping sidewalk closures and from materials delivery truck traffic. As construction schedules would differ, the heavier truck demand from construction for the project would not overlap with the excavation truck traffic for the 550 Kearny addition.

PROJECTED TRAVEL DEMAND

The proposed project would generate approximately 960 person trips during the p.m. peak hour (about 920 office and 40 retail). Because the existing office building on the site generates an estimated 200 peak-hour person trips, the number of new net peak-hour trips to and from the project site would be about 760./2/ This new peak-hour travel generated by the project would result in an associated demand for about 240 trips by auto, 190 on Muni and 130 on BART. The remaining demand for 200 trips would principally be for travel on other public transit and other modes (walking, bicycles, etc.). (See Table 6, p.74.)/3/

A total of 17.4 million gross sq. ft. of new office space is proposed, approved or under construction in the City. Tables B-2 and B-3, in Appendix B, show the projects included in the cumulative analysis. Approximately 1.3 million gross sq. ft. of existing office space would be replaced by the proposed development, resulting in about 16.1 million gross sq. ft. of net new office space. This growth, and the 0.5 million gross sq. ft. of net new retail construction, would generate approximately 48,000 person trip ends during the weekday p.m. peak hour.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because

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residential travel in the downtown is generally in the opposite direction to commute traffic during peak-hours. The office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Inclusion of residential projects, therefore, would result in double counting of project generated travel.

Peak-hour travel by mode for the project and cumulative developments is shown in Table 6. The modal assignments have been made assuming existing travel patterns and do not attempt to predict any modal shift (see Appendix F, p. 164, for further discussion). As the bridge and freeway system serving the City is currently near capacity during peak hours, the present population of persons traveling by single-occupant automobiles might be expected to change in the future. Much of the City-wide peak-hour increase might be expected to be accommodated by a shift from single-occupant automobile to ridesharing or public transit.

TABLE 6: PROJECTED PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE*

Modal Type	Projects Under Construction**	Approved Projects**	Projects Under Formal Review**	580 Calif. Project	Total
Automobile	6,980	4,600	3,410	240	15,230
Muni	5,480	3,620	2,710	190	12,000
BART	3,700	2,440	1,820	130	8,090
AC Transit	1,720	1,120	820	60	3,720
SamTrans	250	170	120	10	550
SPRR	940	620	460	30	2,050
GGT	820	540	400	30	1,790
Ferry	180	110	80	10	380
Other	<u>1,480</u>	<u>1,220</u>	<u>1,430</u>	<u>60</u>	<u>4,190</u>
	21,550	14,440	11,250	760 ***	48,000

* Projections based upon distribution shown in Table F-1, Appendix F, p. 165.

** Individual projects are listed in Table B-2, Appendix B, p. 131. The 580 California St. project has been separated here from the projects under formal review totals shown in Table B-3.

*** Less trips by existing on-site employees

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed

project and cumulative development. An alternative type of approach is to forecast travel demand based upon regional projections of future employment (employment trend approach)./4/ Appendix F, pp. 172-175, contains a discussion of the differences between the two approaches.

TRANSIT

The transit analysis (conducted using Department of City Planning Guidelines) analyzed cumulative and project ridership based on existing capacity. As a "worst case", this analysis assumes no expansion in the transit system and the results are not dependent on increased City, State or Federal funding. If existing City, State or Federal funding were to decrease, operating conditions on the Muni and other carriers would be expected to deteriorate. Conversely, if City, State, and Federal funding were to increase over existing levels, operating conditions would be expected to improve. The estimated ridership, for the 16.1 million gross square feet of net new cumulative office development and the 0.5 million gross square feet of net new retail development, and for the project, and load factors based upon existing capacity are shown in Table 7. As all of the transit agencies have five-year plans for improving service, load factors based upon capacity proposed to occur in the current five-year plan cycle (1982-1987) for each transit agency are also shown in Table 7.

The existing loads plus the project trips and cumulative trips on the 37 Muni lines with stops within 2,000 feet of the site are expected to result in about 36,100 outbound p.m. peak hour trips./5/ The project would generate approximately 190 p.m. peak-hour Muni trips. Project-generated riders during the p.m. peak hour would be about 1.6% of the demand from the 16.1 million gross square feet of net new cumulative office development and the 0.5 million gross square feet of net new retail development (see Table 6, p. 74). Line by line Muni loading projections are shown in Appendix F, Table F-2, p. 167.

The addition of the ridership from the projected 16.1 million gross square feet of net new cumulative office development and the 0.5 million gross square feet of net new cumulative retail development would cause demand on most of the affected Muni lines to exceed existing capacity. This would also be the case for BART transbay, Southern Pacific and SamTrans. As the cumulative demand increases, the length of time of peak loadings would increase, spreading peak-of-the-peak conditions over time. As some lines

only operate during heavy demand periods (for example, express service for one to two hours during peak periods), there may not be additional capacity available to allow spreading over time without adding more runs. (Additional runs may not require increases in vehicle fleet size as the additional runs would be extending the peak period level of service over a longer period of time. Additional runs would cause increases in operating and maintenance costs as well as some addition to farebox revenues.)

Assuming that existing funding continues and proposed expansion occurs, the future load factors on the transit agencies would be as shown in Table 7. Muni is proposing to increase systemwide capacity by 19%. Assuming the increase to be provided uniformly, average loading including ridership from the cumulative demand would be over capacity. If Muni does not apply the increase uniformly but rather gives a greater increase in capacity on the lines serving the downtown and a lower increase in capacity on other lines, the load factors would be lower than those shown for Muni in Table 7. BART is projecting a peak hour capacity of 16,500 seats transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity would be 24,750 and 16,500 respectively. Average loadings, including ridership from the projected 16.1 million gross square feet of net new cumulative office development and the 0.5 million gross square feet of net new retail development, would not be over capacity with the anticipated five-year plan capacity.

AC Transit does not have any increases proposed for its transbay service and would therefore be operating at 99% of its recommended maximum capacity with the cumulative demand. SamTrans is proposing to have a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity would be 6,250 riders. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrans does not have any proposals to increase seated capacity, but station improvements, including additional parking, are proposed. Southern Pacific would therefore operate in excess of its recommended maximum capacity with the cumulative demand. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25% over existing levels and to increase ferry service by addition of another Larkspur Ferry (an increase of about 70% over existing service). Average future loadings (including the cumulative demand) on Golden Gate Transit would not exceed capacity when the proposed additions become available./6/

TABLE 7: AFTERNOON PEAK HOUR OUTBOUND TRANSIT RIDERSHIP

Agency	RIDERSHIP			LOAD FACTOR (Existing Capacity)*			LOAD FACTOR (Proposed Capacity)**	
	Existing	Existing plus Cumulative w/o project	Existing plus Cumulative plus Project	Existing	Existing plus Cumulative w/o project	Existing plus Cumulative plus Project	Existing plus Cumulative w/o project	Existing plus Cumulative plus Project
Muni***	24,660	35,900	36,090	0.92	1.34	1.35	1.13	1.13
BART								
Transbay	13,600	18,840	18,920	0.90	1.25	1.25	0.76	0.76
Westbay	6,445	9,170	9,220	0.61	0.88	0.88	0.56	0.56
AC Transit	9,560	13,220	13,280	0.72	0.99	0.99	0.99	0.99
SamTrans	1,700	2,240	2,250	0.78	1.03	1.03	0.36	0.36
SPRR	5,180	7,200	7,230	0.78	1.09	1.10	1.09	1.10
Golden Gate								
Motor Coach	4,510	6,270	6,300	0.66	0.91	0.92	0.73	0.73
Ferry	800	1,170	1,180	0.39	0.56	0.57	0.33	0.33

*Load factor based upon existing (recommended) maximum capacity. A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loadings that occur occasionally.

**Proposed capacity as specified by each agency's Five-Year Plan.

*** 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning.

SOURCE: Environmental Science Associates, Inc.

PEDESTRIANS

The main entrance to the building, through which pedestrians would reach the lobby and elevators to upper-floor offices, would be located on California St. Ground-floor retail space would have separate entrances on California and Kearny Sts. (see Figures 7 and 8, pp. 15-16).

There would be about 900 pedestrian trips during both the p.m. and noon peak hours to and from the project. These trips would increase pedestrian traffic on the California St. sidewalk by 0.5 to 1.0 persons per minute, per foot of effective width. Added to existing pedestrian traffic (in 1982), the trips in and out of the project building would increase sidewalk traffic to as much as 15% of capacity during these peak hours. Pedestrians would remain unrestricted in their choice of walking speed, but would be required to maneuver to avoid conflicts with other pedestrians./7/ Table F-4, Appendix F, p.172, shows flow rates and capacity used on sidewalks.

Upon project completion, the east crosswalk across California St. at Kearny St. would function at about 60% of capacity. On each cycle of the signal, pedestrian standing room in the northeast corner of the intersection (at the southwest corner of the project site) would typically fill to about one-quarter of capacity.

The subsurface parking garage proposed for the project would be entered from Spring St., increasing vehicular traffic across the California St. and Sacramento St. sidewalks by about 80 vehicles per day, or about 15 vehicles (about one every four minutes) during each of the peak-hours. Peak-hour pedestrian traffic on the California St. sidewalk crosses Spring St. at a rate of 10 to 15 persons per minute; there would be momentary delays for some pedestrians caused by vehicular traffic to and from the parking facility.

Spring St. is not used heavily by pedestrians. At present, about 100 to 150 persons use the narrow (four-ft.) sidewalks on Spring St. during the peak noon and p.m. hours. Vehicles accessing the loading docks and underground garage entrance to the project on Spring St. would cause momentary interruptions of sidewalk traffic on the west side of Spring St. There would be about eight service vehicles or trucks per hour during the day stopping at the loading docks. Blockage of the sidewalk by the cab of a docked truck would seldom occur, as the loading space would be recessed about 35 ft. from the sidewalk, accommodating large single-unit trucks as well as smaller service vehicles.

VEHICLES

Vehicular access to the proposed off-street loading spaces and the subsurface parking garage would be from Spring St. via California St. Spring St. is narrow (fourteen ft. curb-to-curb width) and one-way northbound to Sacramento St. Right turns from California St. onto Spring St. may be made from the curb lane which has a red zone (violators towed 7 a.m. to 6 p.m.) just east of Spring St. Left turns from California St. (eastbound) onto Spring St. may encounter momentary conflicts with oncoming (westbound) California St. traffic including cable cars.

On Sacramento St., traffic flow is one-way westbound; Muni's 1-California trolley line operates in the right lane. Therefore, outbound vehicles from Spring St. do not encounter transit vehicles when entering Sacramento St. Because Montgomery St. (one block east of Kearny St.) is one-way southbound, and Sacramento St. is one-way westbound, there are no left-turning movements from Montgomery St. onto Sacramento St. Drivers of outbound vehicles from Spring St. onto Sacramento St. are able to find gaps in the Sacramento St. traffic flows on each cycle of the signal at Montgomery St. and are not delayed in exiting from Spring St.

The project would add about 25 peak hour vehicle trips associated with the project garage or loading spaces on Spring St. that would exit on Sacramento St. and would enter from California St. During the p.m. peak hour there would also be vehicles stopping at curbside to pick up passengers from the building. Stopping on the north (project) side of California St. is prohibited during 4 p.m. to 6 p.m., and is actively discouraged by police; a Muni bus stop is located on the east (project) side of Kearny St. and stopping on the remainder of the Kearny St. (project) frontage is prohibited during 4 p.m. to 6 p.m. In all, fewer than 50 project-associated vehicles per hour (one per signal cycle) would be expected in any approach to any intersection in the area.

As a worst-case estimate, the project would not increase the ratio of traffic volumes to capacity by more than 10% on any street in the site vicinity. At the intersection of California and Kearny Sts., volumes in through-lanes would remain within the range of Level of Service C, or 70% to 80% of capacity. (See Appendix F, Table F-3, p. 168, for definitions of vehicular levels of service.) Operating conditions in the two right turn lanes of the northbound Kearny St. approach to California St. would worsen slightly from

existing levels due to conflicts with pedestrian traffic, increased by the project, in the east crosswalk. Right turns from California St. onto Kearny St. would similarly worsen due to conflicts with increased pedestrian traffic in the north crosswalk.

Cumulative vehicular and pedestrian traffic from 16.1 million gross sq. ft. of net new office development and the 0.5 million gross sq. ft. of net new retail development would degrade service levels at the intersections serving the freeway ramps closest the project as shown in Table 8. After cumulative development, assuming existing traffic patterns and existing modal share relationships remain constant, operations at the intersections of Clay and Front Sts. and Washington and Battery Sts. would not be reduced below Level of Service C by addition of the cumulative development or project traffic.

TABLE 8: LEVELS OF SERVICE AT FREEWAY RAMP INTERSECTIONS IN THE PROJECT VICINITY DURING PEAK-HOURS

(AM)	CLAY/FRONT (PM)		WASHINGTON/BATTERY	
	<u>LOS*</u>	<u>V/C**</u>	<u>LOS</u>	<u>V/C</u>
Existing	A	0.51	B	0.62
Existing plus Cumulative development*** Without project	C	0.73	C	0.79
Existing plus Cumulative development With project	C	0.74	C	0.80

*LOS stands for Level of Service which is defined in Table F-3, Appendix F, p. 168.

**V/C stands for volume to capacity ratio, the use of which is explained in Appendix F, p. 164.

***The 16.1 million gross sq. ft. of net new cumulative development and the 0.5 million gross sq. ft. of net new retail development is listed in Table B-2, p. 131. The 580 California St. project has been separated from the projects under formal review totals shown in Table B-2.

PARKING

The project would provide space for long-term valet parking of about 35 automobiles in a subsurface level accessible by a one-way ramp from Spring St. Vehicle-pedestrian conflicts resulting from vehicles entering and leaving the subsurface parking level on Spring St. have been discussed under pedestrian impacts (see p. 78).

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The project would create a demand for about 250 long-term spaces (more than 6 hours) and about 30 short-term spaces; overall there would be an on-site deficit of about 245 spaces (see Appendix F, p. 164, for more discussion). Commuters and visitors traveling to the proposed building by automobile would compete for spaces in public garages in the area. Within the near vicinity (about 1,000 ft.) of the project site are approximately 6,660 commercially available off-street parking spaces of which about 410 are located on sites of projects approved or under formal review and would eventually be lost. Average daytime occupancy in the unaffected spaces is approximately 97% with about 210 spaces open at any one time. Cumulative short-term parking demand from buildings proposed and under construction near the project (that would compete for the parking within 1,000 ft. of the project—walking distance for short-term parkers) is projected to be 140 spaces. The net cumulative short-term parking in the area within 1,000 ft. of the project would be able to meet the cumulative short-term demand.

Using the methodology described in Appendix F, p. 164, long-term parking demand for the 16.1 million gross sq. ft. of net new cumulative office development and the 0.5 million gross sq. ft. of net new retail development in the greater downtown area has been calculated to be about 15,600 spaces (including the project). The project would represent 1.6% of the total demand. As long-term parking demand is typically work (employee) related and is more likely to be influenced by cost rather than by location (see Appendix F, p. 164), long-term parking demand has been assumed to be distributed over the greater downtown and South of Market areas rather than being concentrated near the proposed project location. A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, Folsom, Eighth and Bryant Sts./8/ Based on average occupancy, about 4,100 spaces are available on a daily basis. The cumulative demand for the whole downtown area would create a theoretical net deficit of 11,500 spaces. Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels; major construction would be required to add new capacity assuming vehicle occupancy remains the same and such items as flextime do not become common.

A net deficit of 11,500 spaces does not mean that 11,500 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking

deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts from the worst-case impacts shown in Table 8, p.80. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

The deficit may be less than this estimate as the survey did not inventory parking in the Civic Center area, the areas west of Eighth St., south of Bryant St. or north of Washington St. The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are proposed to be added (exclusive of 4,845 parking spaces to be provided in Yerba Buena Center).

Current City policy, as stated in the Revisions to the Transportation Element of the Master Plan Regarding Parking, is to "Discourage the addition of new long-term parking spaces in and around downtown, limit the amount of new spaces to that which cannot reasonably be accommodated by transit and locate long-term parking facilities in areas peripheral to the downtown commercial district."/9/

The Master Plan Parking Policy has also stated the need to "encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand or to car/van pool parking where short-term parking demands are low."/9/ Accordingly, approximately 14,000 existing off-street spaces in the C-3-0 use district could be converted to short-term-only parking if the City enacted legislation to establish public control over private garages.

Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of car pools and van pools, or the creation of satellite (intercept) parking facilities in outlying non-residential areas or in outlying cities, with shuttle or expanded Muni service to the downtown area, or increased use of transit directly for commuters from San Francisco or from suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Streets. All transit options would add to the demands on the regional and local transit systems, however, particularly Muni.

TRUCKS AND SERVICE VEHICLES

The project would generate an estimated average hourly demand for about 3.4 loading spaces and a peak demand of about 4.2 loading spaces./10/ Three 35-ft. by 12-ft. stalls would be provided in an enclosed loading area accessible at grade from Spring St. The provided space would satisfy the average demand for loading space. The stalls would be set on an angle to allow backing maneuvers by large trucks from Spring St., which is 14 ft. wide. As the loading dock would be recessed 35 ft. the largest single-unit trucks could be accommodated without blockage of the sidewalk. (Peak pedestrian traffic on Spring St. sidewalks is light, about one person per minute.) Stops by tractor-trailer combinations would be occasional, such as by moving vans. These would enter Spring St. with difficulty because of the narrow street width. If docked, the cab of the tractor would block Spring St.

The number of loading spaces proposed would conform to the requirements of Section 152 of the City Planning Code and would comply with the number and dimensions recommended in City Planning Commission Resolution No. 9286./11/ The loading dock dimensions would exceed the minimum requirements of Section 154 of the Code. The proposed loading and parking plan does not conform to Resolution No. 9286 in the following ways: the width of the curb cut for the loading dock would be about 35 ft., compared to a maximum allowable continuous curb cut of 24 ft.; the combined length of curb cuts on Spring St. for the loading dock and off-street parking ramp would be about 45 ft., compared to a maximum allowable of 36 ft. for a combination of curb cuts on any single street frontage; and, the distance between curb cuts would be about 7 ft., compared to a minimum allowable of 20 ft.

Some use of curbside loading space would be required during peak demand periods. The two metered yellow zone spaces now located along the Kearny St. frontage of the site would serve this purpose. There are also six metered spaces in a yellow loading zone on California St. east of Spring St., subject to towaway between 4 p.m. and 6 p.m.

NOTES - Transportation

/1/ Lynn Pio, Manager of the Municipal Railway Cable Car Renovation project, telephone communication, May 21, 1982.

/2/ Trip generation rates by floor area, for various uses, have been compiled by the Department of City Planning in Guidelines for Environmental Evaluation - Transportation Impacts," October 1980. Travel from office uses has been assumed to occur at the rate of

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17.5 total (57% work + 43% non-work) person trip ends (pte) per 1,000 net sq. ft. of office space. (A person trip end is a one way trip.) Travel from retail uses has been assumed to occur at 100 total pte/1,000 gross sq. ft. of retail space. Based on recent survey data, 45% of the retail travel has been assumed to be internal to the project site (i.e. already counted as part of the office travel). Retail trip generation is from Trip Generation, Insititute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m. Twenty percent of daily office trips and 10% of daily retail trips are assumed to occur during the p.m. peak hour.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980, and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ The Department of City Planning, Office Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

/5/ The 37 affected Muni lines are the 1, 1x, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 30, 30X, 31, 31X, 38, 38L, 38AX, 38BX, 41, 42, 45, 66L, J, K, L, M, N, 71, and 80X.

/6/ Muni projections from Municipal Railway Rehabilitation and Replacement Plan. BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregory Kipp of SamTrans on August 18, 1982; A-C Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on August 19, 1982, Southern Pacific proposal from Jim Strong, Design Engineer with Southern Pacific, on August 26, 1982.

/7/ Capacity analysis based on Table 3.6 in Urban Space for Pedestrians, by Boris Pushkarev and Jeffery Zupan.

/8/ Inventory of Off-Street Parking Spaces, San Francisco Department of City Planning, May 24, 1982.

/9/ Revisions to the Transportation Element of the Master Plan Regarding Parking, Resolution 7647, San Francisco Planning Commission, January 20, 1977.

/10/ Wilbur Smith and Associates, Center City Circulation and Goods Movement Study, prepared for the San Francisco Transportation Policy Group, September 1980.

/11/ City Planning Commission Resolution 9286, Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," adopted January 21, 1982.

E. AIR QUALITY

Upon completion, the project would affect air quality in two ways: emissions would be generated by project-related traffic and by combustion of natural gas for space and water heating. Transportation sources would account for over 95% of project-related emissions.

Carbon monoxide (CO) would be the pollutant most likely to be increased by the project. Cumulative and project effects on sidewalk CO levels at California St., Kearny, Washington and Clay Sts., were calculated for 1987 using peak-hour traffic volumes according to methods recommended by the Bay Area Air Quality Management District (BAAQMD); the results are shown on Table 9, p. 85.

TABLE 9: PROJECTED WORST-CASE LOCAL SIDEWALK CARBON MONOXIDE CONCENTRATIONS AT STREETS NEAR THE PROJECT*

<u>Street</u>	<u>Average Time</u>	<u>Existing 1982 (ppm)**</u>	<u>1987 Base Without Project (ppm)**</u>	<u>1987 With Project (ppm)**</u>
California St. (near Kearny St.)	1-hour	14.0	11.3	11.4
	8-hour	8.1	6.4	6.4
Kearny St. (near California St.)	1-hour	15.7	12.4	12.5
	8-hour	8.7	6.7	6.8
Washington St.	1-hour	17.8	16.5	16.6
	8-hour	8.8	7.3	7.3
Clay St.	1-hour	16.1	14.8	14.9
	8-hour	9.1	7.4	7.5
Background	1-hour	10.3	8.4	8.4
	8-hour	6.5	5.2	5.2

*Calculations were made for worst-case dispersion meteorology according to BAAQMD, Guidelines for Air Quality Impact Analysis of Projects, 1975, updated with 1981 Air Resources Board, EMFAC-6C motor vehicle emission rates. The existing background in 1982 was calculated as the three-year average of the second highest annual concentrations recorded at the BAAQMD monitoring station on Potrero Hill. The 1987 background was the 1982 value adjusted to 1987 according to the regional emissions projected by the 1982 Bay Area Air Quality Plan. The one-hour standard is 35 ppm; the eight-hour standard is 9 ppm.

** parts per million

SOURCE: Environmental Science Associates

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Project-generated traffic would contribute no more than 0.2 parts per million (ppm) to the eight-hour and one-hour CO concentrations in the project vicinity and would cause no violations of standards. Concentrations in 1987 would be less than in 1982 because, unless repealed, increased Federal and State mandated auto-emissions control measures during this period would more than offset the effects of increases in traffic volume.

Estimated daily project-related emissions of carbon monoxide, hydrocarbons, nitrogen oxides, sulfur oxides, and particulates are compared with 1987 projected regional emissions in Table 10, p. 86. None of the project-related emissions would increase pollutant concentrations more than 0.02 percent over existing levels in the San Francisco Bay Area Air Basin.

TABLE 10: ESTIMATED DAILY PROJECT-GENERATED AND REGIONAL EMISSIONS
IN 1987 (tons/day)

	Project-Related Vehicular Fuel Combustion*	Cumulative Development Vehicular Fuel Combustion	1987 Projected Regional Emissions***
Carbon Monoxide	0.181	11.3	2,340
Hydrocarbons	0.016	1.0	515
Nitrogen Oxides	0.023	1.4	543
Sulfur Oxides	0.002	1.7	182
Particulates	0.027**	0.2	536

*BAAQMD, 1981, EMFAC-6C Vehicular Emission Factors. Emissions due to natural gas combustion would be negligible for all pollutants.

**Includes dust generated by vehicular traffic on paved roadways.

***Association of Bay Area Governments (ABAG), BAAQMD, MTC, 1982, 1982 Bay Area Air Quality Plan, p. 58.

SOURCE: Environmental Science Associates, Inc.

In summary, implementation of the project would add to local and regional accumulations of hydrocarbons, nitrogen oxides (two precursors of ozone), CO, particulates, and sulfur oxides. Project-related emissions would impede the attainment of standards for hydrocarbons, CO, and particulates; however, they would probably not have a measurable impact on citywide or regional concentrations, or the frequency of violations of the standards. The project would add to the cumulative increase in ozone downwind but would

not have a statistically significant effect on ozone concentration. Neither the project nor other development in the vicinity would conflict with the control strategies of the Bay Area Air Quality Plan.

F. ENERGY

Energy would be required for demolition of the existing structure, excavation and the removal of debris to a disposal site. An estimated 580 billion Btu at-source would be required during construction./1/ This is the equivalent of about 99,000 barrels of oil (bbl/oil) and includes energy required for fabrication and distribution of materials, as well as direct energy consumption. Direct energy consumption at the site would represent approximately 18% of total construction energy consumption. An estimated 100 billion Btu at-source (18,000 bbl/oil equivalent) would be consumed for site excavation, transportation of materials, and building construction, including on-site consumption of both gasoline and electricity.

Electricity and natural gas for project operation would be provided by PG&E. Electricity would be used for lighting, air conditioning, ventilation, elevator operation, office equipment operation, and plumbing system pumping. Natural gas would be used for space and water heating. Energy conservation measures are proposed. The project would not incorporate solar or other renewable energy sources.

The low-pressure air conditioning system proposed for the project would minimize the energy used to operate fan motors. An innovative scheme involving peripheral air distribution would reduce heat transmission through the building skin. Lighting would be by recessed, heat extract type fluorescent lamps with parabolic diffusers; these would save energy by lowering cooling demand by supplying and returning conditioned air in lieu of conventional air diffusers, as well by providing an efficient source of interior lighting./2/ Because the cooling load has been decreased through the use of heat extract type lamps, double paned windows become feasible as an energy saving feature./3/ Double-paned windows would be incorporated into the project to reduce energy transfer to the outside, reducing energy needed for heating and cooling (during times and in areas receiving direct solar insolation). Individual zone controls and multi-staged water chilling units would also be used to reduce energy consumption. An energy management control system would alert maintenance personnel whenever outside air is suitable for use in cooling the building.

According to an estimate made using a State approved computer program, the project would have an estimated annual energy consumption of about 124,850 Btu per sq. ft. Thus, it would meet or exceed the prescriptive standards of Title 24 of the California Administrative Code which allow consumption of up to 126,000 Btu per sq. ft. annually. The estimated annual energy requirement per sq. ft. for the project is about 20% less than the per-sq-ft. consumption of the existing structure on the site. Annual project energy consumption is shown in Table 11.

The project would have a connected kilowatt load of about 3,400 kilowatts and would consume about 3.5 million kilowatt hours (KWH) of electricity per year./4/ The monthly electrical demand would range from about 265,000 KWH in February to about 326,000 KWH in August. The estimated average electrical demand for the project of about one KWH per sq. ft. per month would be about 70% of the average demand of 1.4 KWH per sq. ft. per month estimated for 16 other high-rise buildings recently proposed in San Francisco./5/ Peak electrical demand would be about 2750 KWH and would occur at about 5:00 p.m. on Mondays in August. This would coincide with PG&E's system-wide electrical consumption peak which occurs in late afternoons in August, but would not coincide with

TABLE 11: ESTIMATED ANNUAL PROJECT ENERGY CONSUMPTION

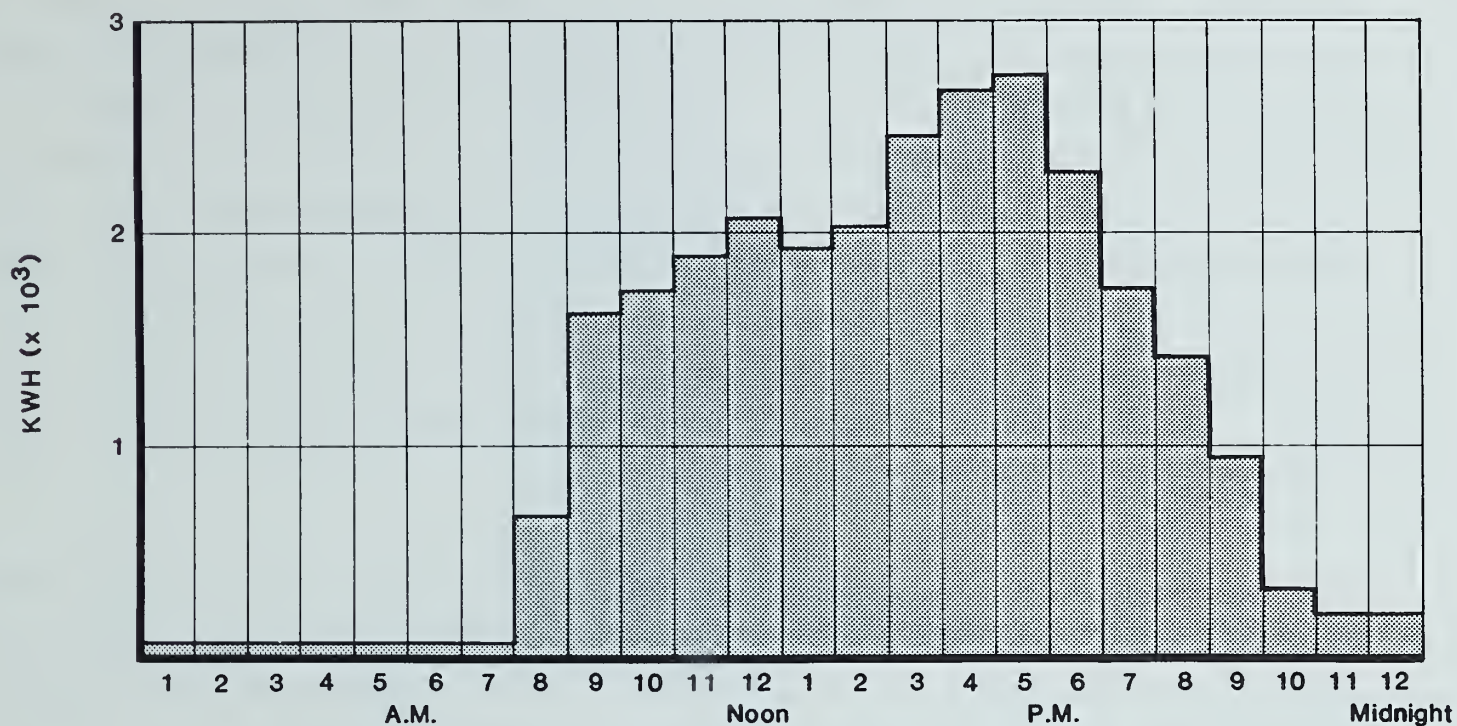
	<u>Units of Energy (in Thousands)</u>	<u>Btu At-Source (in billions)*</u>	<u>Barrel Oil Equiv. (bbl. oil)</u>
<u>Building Operation</u>			
Electricity	3,500 KWH	36.0	6,120
Natural Gas	826 cu. ft.	0.9	150
<u>Transportation**</u>			
Gasoline	120 gallons	26.0	4,420
TOTAL PROJECT	—	62.9	10,690

*1 KWH = 10,239 at-source Btu; 1 cu. ft. = 1,100 at-source Btu; 1 gallon = 140,000 at-source Btu; 1 bbl. oil = 5.88 million at-source Btu.

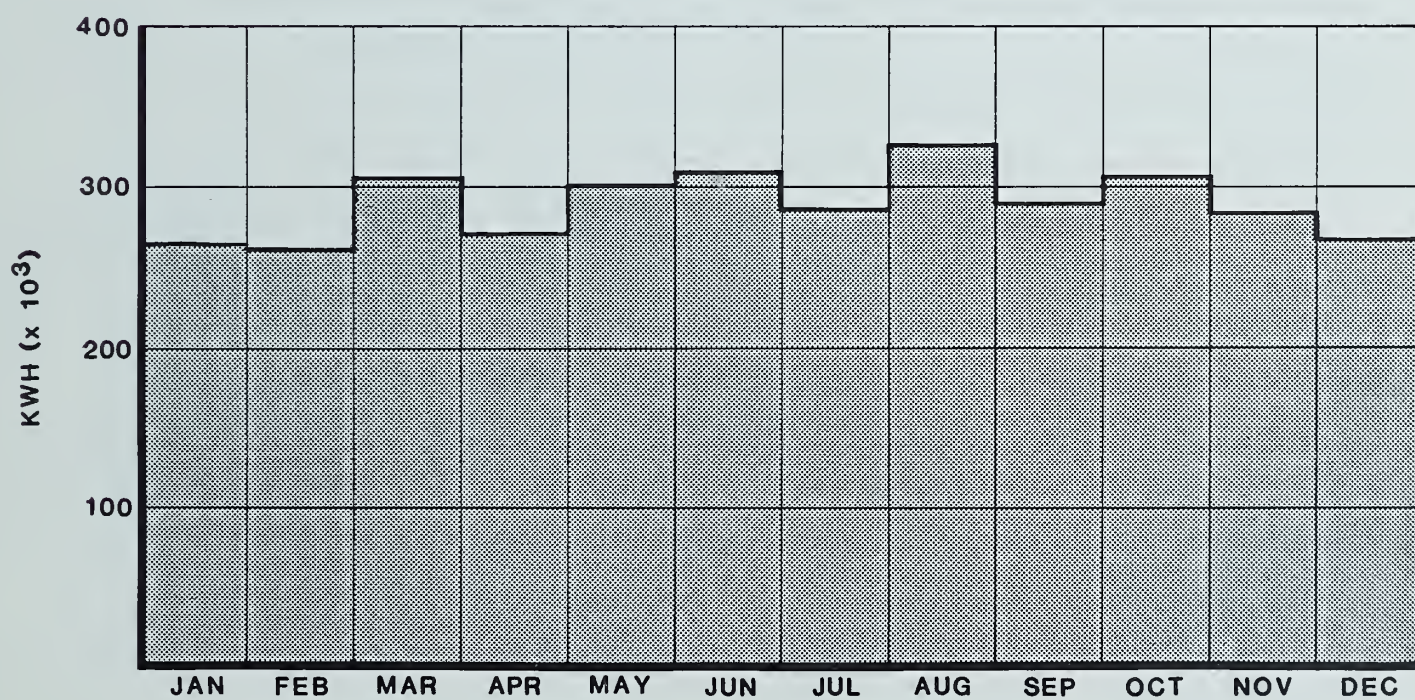
**for vehicle trips generated by the project

SOURCE: Environmental Science Associates and I.A. Naman + Associates

the San Francisco electrical consumption peak which occurs in December or January. Estimated peak daily and average annual electrical demand distribution curves are shown in Figure 19, p. 89.



Peak Day Demand of Electrical Consumption (August)



Average Monthly Electrical Consumption

FIGURE 19: Estimated Electrical Load Distribution Curves

SOURCE: I. A. Naman and Associates and Environmental Science Associates

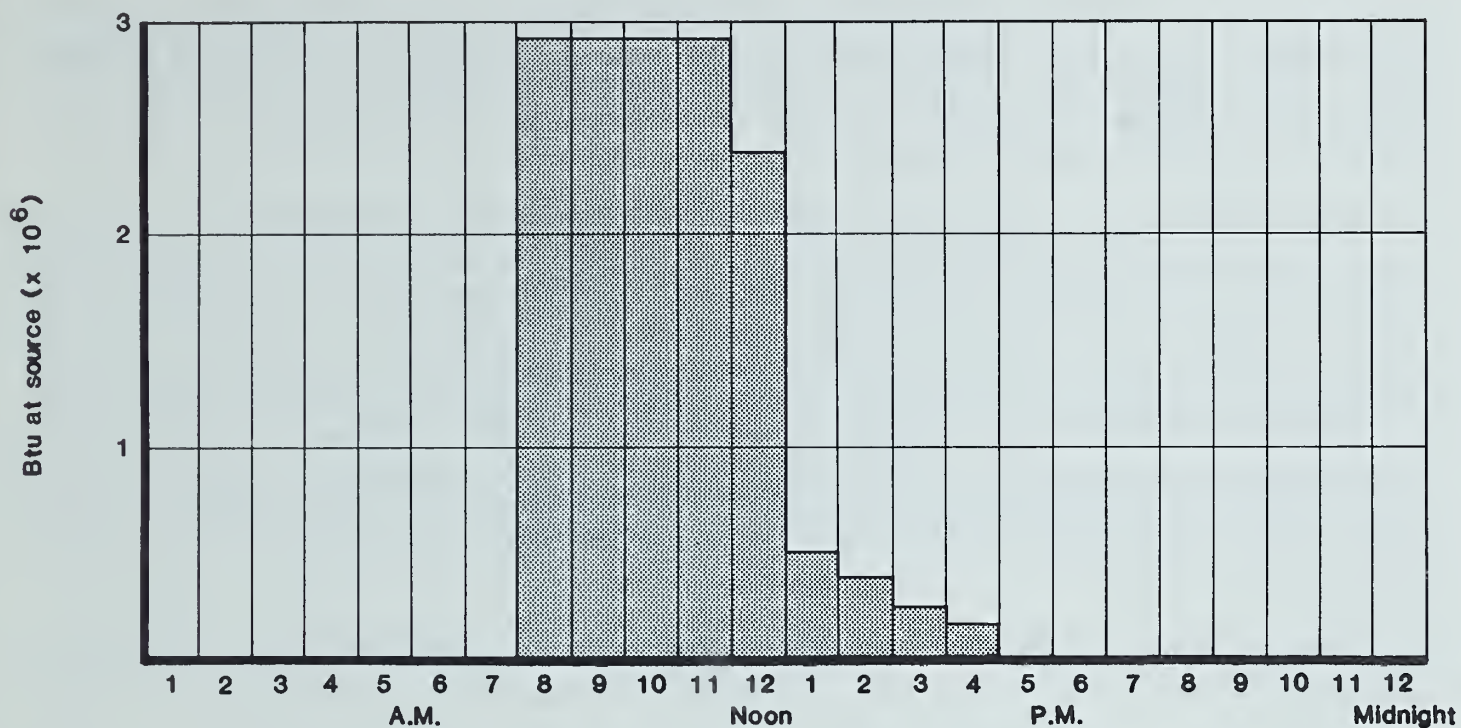
The project would consume about 826,000 cubic ft. (about 908 million Btu at-source) of natural gas annually, or about 75 million Btu per month. This represents an average consumption of about 0.23 cubic ft. per sq. ft. per month for the project, as compared to an estimated average of 2.9 cubic ft. per sq. ft. per month for 16 recently proposed high-rise buildings in San Francisco./5/ Peak demand for natural gas would be about 2,050 cubic ft. per hour, and would occur at between 7:00 and 11:00 a.m. on January mornings as hot water boilers begin heating the building. This would not coincide with the PG&E system-wide peak period for natural gas which occurs in the early evening hours in January. Estimated daily and average annual natural gas distribution curves for the project are given in Figure 20, p. 91.

Vehicle travel generated by the completed project would consume approximately 200,000 gallons of gasoline annually. This is equivalent to about 26 billion Btu per year. This projected use is based upon the mix of vehicles expected in California in 1985. In general, statewide vehicle fuel use is expected to decrease until 1985 as the vehicle fleet becomes more efficient and fuel more expensive.

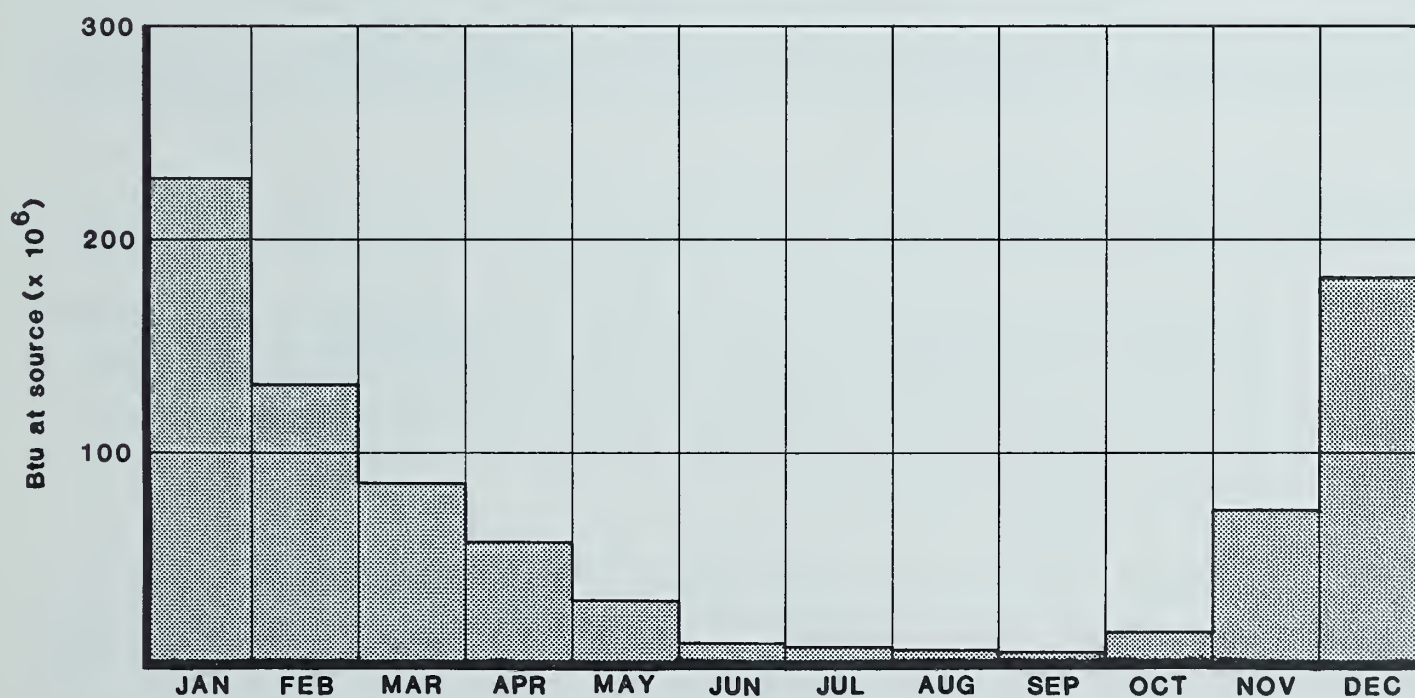
Cumulative increases in energy consumption in Downtown San Francisco by approved and recently proposed projects (16.1 million sq. ft.; see Appendix B, Table B-3, p. 134) would increase annual electrical consumption by more than 260 million KWH and natural gas consumption by more than 403 million cubic ft. Transportation associated with this cumulative office development would increase diesel fuel consumption by about 1.3 million gallons per year, gasoline consumption by about 8.8 million gallons per year, and electricity by about 52 million kilowatt-hours per year. Total increase in downtown energy demand would be about five trillion Btu annually, equivalent to about 880,000 barrels of oil per year. The electrical consumption represents about 0.4% of the annual PG&E system demand in 1981. In 1981, PG&E had a surplus peak generating capacity of 4,500 MW and in 1985 expects to have a surplus of 4,200 MW. The energy demand presented by cumulative development in San Francisco (peak demand of about 312 MW) could be accommodated by PG&E facilities now and in the future./6/

NOTES - Energy

/1/ Btu, British thermal unit, a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy.



Peak Day Demand of Natural Gas (January)



Average Monthly Natural Gas Consumption

FIGURE 20: Estimated Natural Gas Distribution Curves

SOURCE: I. A. Naman and Associates and Environmental Science Associates

IV. Environmental Impact

/2/ Heat extract lamps allow rising warm room air to pass over lamps and draw the lamp heat directly up into the ceiling, thereby preventing this heat from entering the occupied space. This reduces the amount of cooling necessary and lessens the quantity of air circulated by the air distribution system. The reduction in air circulation reduces the amount of energy needed to drive the fans.

/3/ One of the major energy expenditures in high rise office structures is the cooling demand generated by waste heat from lights. In general the major energy concern in high rises is heat loss (cooling) and glazing areas act as important areas for heat loss to the outside. Double paned windows would normally not be feasible as it prevents heat loss through glazing. The proposed project plans to incorporate heat extract type light fixtures which eliminates the problem of waste heat from lights in occupied spaces. With the problem of excess heat virtually eliminated double paned windows become a feasible energy conservation measure. Double paned windows would eliminate the heat transfer of solar radiation into areas accessed by sunlight and thereby reduce cooling loads and would prevent heat loss during the night and thereby reduce heating loads during early morning hours.

/4/ Larry A. Fabian, I.A. Naman and Associates, project engineers, letter communication, April 6, 1982.

/5/ The following projects have been included in the comparative analysis of energy consumption (to determine an average): 101 Montgomery, 456 Montgomery, Howard & Main, 101 Mission, 595 Market, Spear/Main, 505 Sansome, Post/Kearny, 180 Montgomery, 135 Main, Golden Gateway, Pacific III, Pacific Gateway, Washington/Montgomery, Daon Building at 353 Sacramento St. and Bank of Canton. See Appendix D, Tables D-1, D-2 and D-3, for a list of projects and total area considered in the cumulative analysis.

/6/ Summary of Loads and Resources (Form R-1A), and Future Generating Facilities and Changes to Existing Facilities (Form R-6), Pacific Gas & Electric Company, April 1, 1982.

G. CONSTRUCTION NOISE

The noise environment of the project site is dominated by vehicular traffic, including trucks, automobiles, and emergency vehicles. The Environmental Protection Element of the Comprehensive Plan indicated a day-night average noise level (Ldn) of 75 dBA on Kearny and California Sts. in 1974./1,2,3/

Project construction would occur in several stages: demolition and clearance, excavation, foundation preparation, frame erection, and exterior and interior finishing. These activities would take a total of about 24 months. Throughout the construction period there would be truck traffic to and from the site, initially hauling away debris and dirt and then delivering building materials. Construction activities would temporarily increase noise levels in the project vicinity. Pile driving, a major source of construction noise during foundation preparation, would not be required for the project./4/

IV. Environmental Impact

All powered equipment used during construction, other than impact tools, must comply with the San Francisco Noise Ordinance (Section 2907b), which specifies a sound level of not more than 80 dBA at 100 ft. The Noise Ordinance prohibits construction work from 8 p.m. to 7 a.m. if noise from such work exceeds the ambient noise levels by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works.

Typical construction noise levels anticipated for this project are shown in Table 12. Construction noise levels would be highest during the four weeks of building excavation and 24 weeks of exterior finishing. Noise levels in offices nearest the site in the 550 Kearny St. building and at 550 California St. could reach as high as 75 dBA and 78 dBA, respectively, assuming closed windows. Inside the Federal Home Loan Bank, construction noise levels could reach 64 dBA with the windows closed. All of these buildings have operable windows; if the windows were opened to provide ventilation, interior noise levels would generally increase by about 5 dBA. Noise levels of 70 to 75 dBA result in intermittent communication impairment, requiring raised voices at distances greater than two ft. and restricting telephone use.^{4,5/} Construction noise levels could reach as high as 62 dBA inside the Bank of America and Liu Chong Hing Bank buildings, which do not have operable windows. Ambient noise at this level would require raised voices to communicate at distances greater than six ft., and would be distracting to workers in these buildings.

TABLE 12: TYPICAL OFFICE BUILDING CONSTRUCTION NOISE LEVELS AT 50 FEET

<u>Construction Phase</u>	<u>Average Noise Level</u>
Ground Clearing	84 dBA
Excavation	89
Foundations	78
Erection	87
Finishing	89

SOURCE: D.N. May, Ph. D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, p. 211.

NOTES - Construction Noise

/1/ Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

IV. Environmental Impact

/2/ dBA is the measurement of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound.

/3/ Department of City Planning, Environmental Protection Element of the Comprehensive (Master) Plan, September 1974, page 17.

/4/ Dames and Moore, Preliminary Geotechnical Study, Proposed Office Building, San Francisco, California, January 1982.

/5/ National Institute for Occupational Safety and Health, Occupational Exposure to Noise, U.S. Department of Health, Educational and Welfare, 1972.

H. GROWTH INDUCEMENT

PROJECT-RELATED EFFECTS

The project would add about 329,500 gross sq. ft. of office space and 10,500 gross sq. ft. of retail and lobby space, and would remove an estimated 70,000 gross sq. ft. of office and 10,000 gross sq. ft. of parking use. The project would result in a net increase of 259,500 gross sq. ft. of office space and 10,500 gross sq. ft. of retail and lobby space at the site. The project would not displace any office uses at the site, as Fireman's Fund Insurance Company, the existing owner/occupant, is relocating its headquarters to Novato and branch operations to One Market Plaza; the cause of this relocation is independent of whether or not the proposed project were to be built./1/

Employment at the site would increase by about 1,120 jobs. Potential tenants are unknown, but could include tenants that relocate from other San Francisco locations, tenants that relocate from outside San Francisco, and new firms. If the building is fully leased, and the availability of its space does not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would eventually increase directly by about 1,590 jobs due to the project.

Any net increase in downtown employment would increase the demand for retail goods and food services in the area. Existing retail could absorb demand not met by the project's retail space. This demand would be met by the proposed 6,700 sq. ft. of retail space on the project site and existing retail space in the project area.

It is expected that many downtown workers would desire to live in San Francisco. Employment growth, however, would not correspond directly to increases in demand for

housing and City services to residents, because some new jobs would be held by individuals who already live and work in the City, or who live in the City but who previously either did not work or worked outside the City, or by those who would live in surrounding communities. To the extent that the project increases the demand for housing in the City, new San Francisco residents would increase demand for commercial, social and municipal services. Increased demand for housing would have a general tendency to increase City residential rents and housing sales prices, although the influence on future housing costs cannot be stated conclusively.

The project would be located in an already developed urban area, and would require no new construction, extension or expansion of public services or utilities. New commuters working in the project would create secondary demands on local and regional streets, freeways and transit systems (analyzed above in Transportation Impacts discussion).

CUMULATIVE EFFECTS

Development of the project would continue the trend toward replacement of older buildings in the financial district with new construction, but would not itself stimulate further office development near the project site, as such development has already taken place or is being planned.

Cumulatively, the project could contribute incrementally to a short-term oversupply of downtown office space in the mid and late 1980s. Such an oversupply could occur if demand for office space decreases, and if uncertain business conditions and high inflation rates continue. Increased amounts of available office space in the Financial District would relieve pressure for construction of new office and conversion of existing uses to office space in other areas of the City, particularly South of Market and the northern waterfront. An oversupply of office space in San Francisco, should it occur, would not appreciably inhibit office development elsewhere in the Bay Area, unless commercial rents in San Francisco decline to rates offered in outlying areas; current San Francisco office rents are about 35% higher than nearby cities (see Section III. C, p. 30).

The growth of office space would continue the trend of regional growth in service-sector and office headquarters activities and employment, the effects of which are diffused throughout the Bay region, and cannot be quantified for accurate analysis. The increase

IV. Environmental Impact

in downtown office space and employment would contribute to the continued growth of local and regional markets for goods, services and housing (see pp. 22-26 for a discussion of cumulative effects of downtown office growth).

NOTES - Growth Inducement

/1/ William Newberry, Manager, Real Estate Department, American Express Company, telephone communication, April 28, 1982.

V. MITIGATION MEASURES WHICH WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or project architects and contractors (mitigation measures included as part of the project and presented in the Initial Study are reproduced below), some may be implemented by public agencies, and the remainder are not included in the project. The City Planning Commission could require that some or all of these measures be included as conditions of project approval, if found to be warranted.

Each mitigation measure and its status is discussed below. Where a measure has not been included in the project, the reasons for this are discussed.

URBAN DESIGN

MEASURE PROPOSED AS PART OF THE PROJECT

The project would incorporate pedestrian amenities, including ground-floor retail use and a pedestrian arcade along California St., to improve access to work, to retail spaces and to transit facilities. The large retail windows at street level are intended to provide visual interest for pedestrians. The rough texture of the granite would contrast with the smooth-surfaced window areas and the sidewalk arcade would establish a human scale.

EMPLOYMENT, HOUSING AND FISCAL FACTORS

MEASURE PROPOSED AS PART OF THE PROJECT

According to the formula contained in the Office Housing Production Program Guidelines (OHPP), January 11, 1982, the project would generate demand for 293 housing units in San Francisco. To partially satisfy this housing demand, the project

sponsor has provided equity to a HUD Section 8 housing project, Serenity Towers, at 308 Eddy St. This housing development would result in construction of 73 units of low-income housing, for which the project sponsor has received 146 housing credits (Letter of June 7, 1982, from Dean Macris, Director of Planning; this letter is on file for public review with the Office of Environmental Review, 450 McAllister St., 5th Floor). The multiple credits for these units (two credits for one unit) are allowed under the "multiple credits mechanism" contained in the OHPP Guidelines to "promote and stimulate the production of affordable housing" in the face of "economic considerations" which "dictate that economic incentives be given" for this purpose (p. 9). The remaining housing requirement would be satisfied by development of additional housing at an off-site location or by other means, such as contributions to the City's Shared Appreciation Mortgage Revenue Bond Program.

TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

During the construction period, construction truck movement would be limited to minimize peak-hour traffic conflicts. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering to determine feasible traffic mitigation measures to reduce traffic congestion during construction.

To minimize cumulative traffic impacts due to lane closures and street excavation during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction, or later become known. The project sponsor would coordinate construction plans with the contractor selected for the Muni Cable Car Renovation Program to ensure adequate provision for pedestrian and vehicular travel on California St. and access to the project site for construction vehicles.

The proposed off-street loading plan would exceed the minimum requirements of Sections 152 and 154 of the City Planning Code. The project would provide three off-street loading spaces, which would conform in number and dimension to City Planning Commission Resolution No. 9286, dated January 21, 1982.

V. Mitigation Measures

Upon project completion the project sponsor would encourage tenant firms to implement a flexible time ("flex-time") system for employee working hours (flex-time is designed to reduce peaks of congestion in the transportation system).

To mitigate traffic congestion by the project, a transportation broker in the building management office would encourage transit use through the sale on-site of BART, Muni and Golden Gate Transit passes, and would coordinate employee car pool and van pool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for car pool and van pool information.

The project would be subject to the development fee imposed under Ordinance No. 224-81 (if that fee is sustained) and whatever other lawful measures which may be adopted by the Board of Supervisors for the purpose of generating funds to provide for mitigation of the incremental peak-hour transit congestion attributable to the project upon completion.

Within a year of full occupancy of the project, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for car pools and van pools. The project sponsor would make this survey available to the Department. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward an overall transportation survey for the downtown area to be conducted by the City.

The project sponsor would provide secure bicycle parking facilities to encourage the use of bicycles by employees and messengers. Handicapped parking and handicapped access facilities would be provided in the proposed parking garage.

Building directories and visual aids indicating the location of the freight elevators would be placed in the loading area of the building.

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

Pacific Gas and Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco

V. Mitigation Measures

Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption.

The overload that would occur in Muni, BART, AC Transit and the SamTrans mainline route (Highway 101) due to cumulative development in the Downtown area could be mitigated by provision of additional buses, by headway changes, and possibly by shifts in routes. Implementation of this mitigation measure by the applicable transit carriers would depend primarily on the availability of funds and on actions initiated by MTC and the respective transit agencies and districts.

AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

During excavation, unpaved demolition and construction areas would be wetted at least twice a day to hold down dust; this would reduce particulate emissions (dust) by about 50%. A solid fence would be provided, where feasible, around the construction site to further reduce dust.

The project contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce carbon monoxide emissions.

CONSTRUCTION NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

The project contractor would muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

The general contractor would construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as 5 dBA. The general contractor would locate stationary equipment in pit areas or excavated areas as these areas would serve as noise barriers.

The project sponsor would perform an analysis of noise reduction requirement for the project and include noise insulation features in the building design. Such design features would include fixed windows and climate control.

ENERGY

MEASURES PROPOSED AS PART OF THE PROJECT

A dual pane, tinted window system would be used to reduce energy transfer across the building envelope and to lower heating and air conditioning requirements.

Energy efficient fluorescent lights with parabolic diffusers would be used to conserve energy and reduce glare. These lights also supply and return conditioned air in lieu of conventional air diffusers. Whenever possible, office suites would be equipped with individualized light switches, time clock operation, and fluorescent lights to conserve electric energy.

The project would use an electric-driven water chilling unit which would require less energy to cool the building than would conventional air conditioners. Water pumping systems would use innovative designs and load controls in order to reduce necessary pumping horsepower.

The air circulation system would feature low pressure air distribution with individual air handling units on each floor to reduce necessary fan horsepower and provide the opportunity to reduce "off-hour" energy use. The air circulation system for each floor could be operated independently.

MEASURES NOT INCLUDED IN THE PROJECT

The project sponsor could consider incorporating load management measures to lower the building energy demand during PG&E peak-hour demand periods. This would depend on potential savings after an economic analysis.

Due to lack of space on the subsurface parking level, the project would not provide containers for collection of recyclable solid wastes (such as glass, metal, computer cards and newspaper). All parking spaces are considered necessary to the building's marketability.

UTILITIES AND PUBLIC SERVICES

MEASURES PROPOSED AS PART OF THE PROJECT

An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services (OES), to insure coordination between the City's emergency planning activities and the project's plan and to provide services to building occupants in the event of an emergency. The project's plan would be reviewed by the OES and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

To reduce the demand on police protection services, the project would incorporate internal security measures, such as internal security personnel, well lighted entries, and alarm systems.

The project would incorporate low-flow faucet and toilet fixtures to reduce water consumption and wastewater generation.

LAND (Topography, Soils, Geology)

MEASURES PROPOSED AS PART OF THE PROJECT

A detailed foundation and structural design study would be conducted for the building by a California licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

If dewatering were necessary, groundwater observation wells would be installed by the contractor to monitor the level of the water table and other instruments would be used to monitor potential settlement and subsidence. If, in the judgment of City engineers, unacceptable subsidence occurs during construction, groundwater recharge would be begun to halt the settlement. This might cause a delay in construction.

V. Mitigation Measures

Any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to prevent sediment from entering the storm drain/sewer lines.

During construction, the contractor would sweep streets manually or mechanically to prevent siltation of storm drains and generation of dust. The contractor would also confine construction equipment, maintenance and refueling activities to locations where petroleum spillage would be contained.

If necessary, excavation pit walls would be shored up and protected from slumping or lateral movement of soils into the pit. Shoring and sheeting with soldier beams could be used for this purpose.

Windows would be installed in the project in such a way as to minimize the possibility of breakage during an earthquake, and to maximize the possibility of glass falling inward, rather than outward, should windows break.

CULTURAL

MEASURE PROPOSED AS PART OF THE PROJECT

Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE
PROJECT IS IMPLEMENTED

This chapter covers impacts that cannot be eliminated. It does not include impacts described in Chapter IV, Impacts, pp.43-96, that could be reduced to a level of insignificance by measures described in Chapter V, Mitigation, pp.97-103, regardless of whether or not mitigation measures have already been included by the project sponsor as part of the proposed project.

A. TRANSPORTATION

The project would provide about 35 long-term valet parking spaces and would generate a demand for about 340 long-term and 65 short-term spaces, resulting in a projected daily deficit of about 370 spaces. This parking space shortfall is consistent with the 1977 Revision to the Transportation Element of the Comprehensive Plan, which discourages new long-term parking in the downtown area.

B. CUMULATIVE OFFICE DEVELOPMENT

The project would be part of a trend of denser development in Downtown San Francisco. Cumulative increases in the amount of office space would continue regional growth in service-sector and office headquarters activities and employment. The project would contribute to cumulative traffic increases Downtown and cumulative increases in passenger loadings on BART, Muni and other transit agencies.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

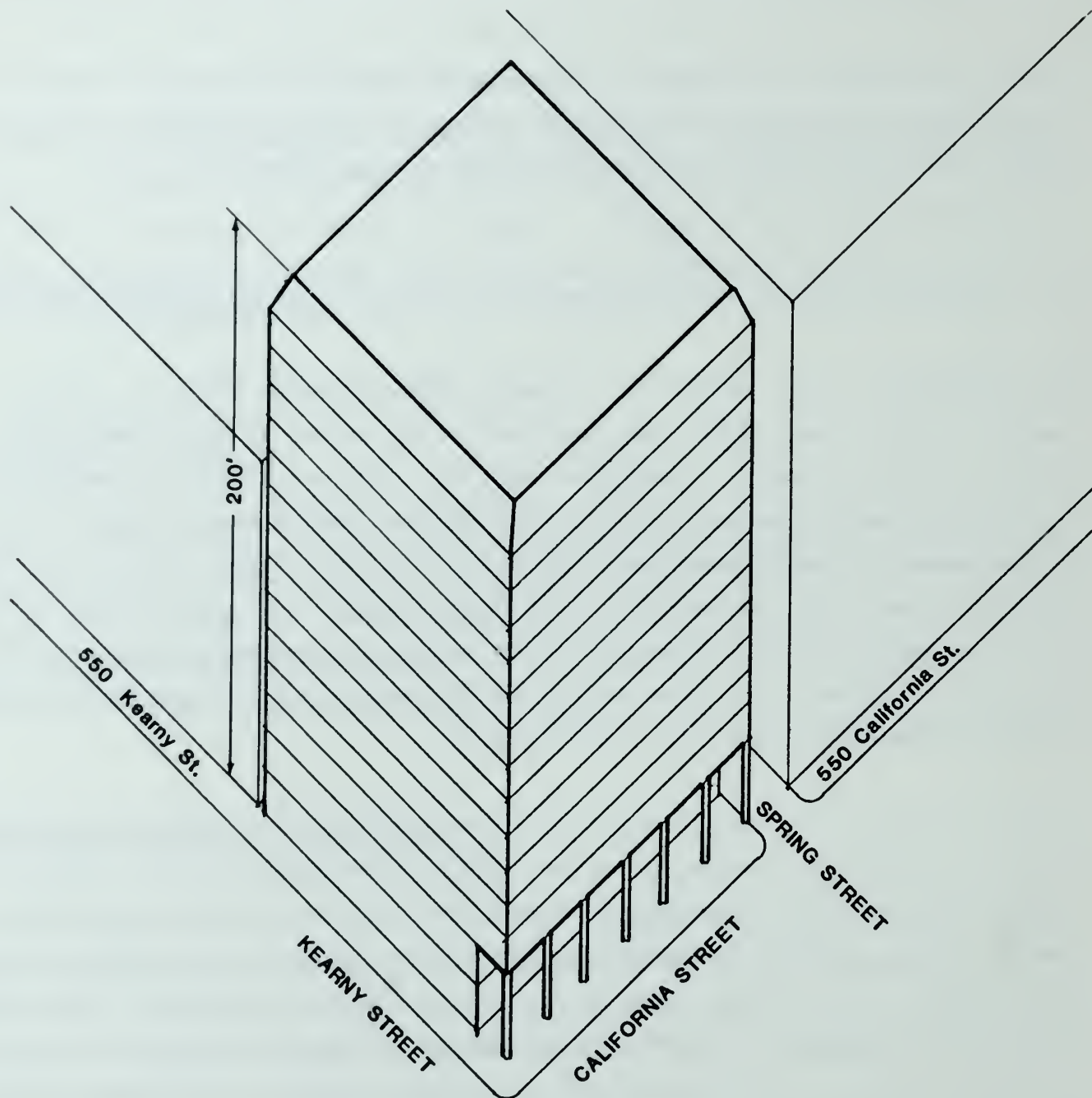
Several alternatives to the project as proposed are described and compared below. All of these project alternatives contemplate development at the same location as the proposed project. The project sponsor has considered each of these alternatives.

A. ALTERNATIVE ONE: NO TRANSFER OF PERMITTED BASIC GROSS FLOOR AREA

This alternative would consist of a 15-story office building similar in design to the proposed project, about 200 ft. tall, developed on the project site (see Figure 21, p.106). (Note that the drawing is conceptual only and does not attempt to portray facade materials or architectural detailing.) It would contain approximately 224,000 gross sq. ft. of commercial space, representing an FAR of about 14:1. There would be one level of retail and banking space containing a total of about 10,500 sq. ft., and 14 floors of office space containing about 213,500 sq. ft. There would be no residential development on the site and no transfer of permitted basic gross floor area from adjacent parcels would be used to increase the amount of commercial space.

Under Alternative One there would be two levels of subsurface parking, accommodating about 39 vehicles; the parking levels and building foundation would not extend beneath public sidewalks and a revocable encroachment permit would not be required. Two loading docks would be accessible at grade from Spring St. to conform with the requirements of the City Planning Code and recommendations in City Planning Commission Resolution No. 9286. As with the proposed project, mechanical equipment would be located in the basement and in a rooftop penthouse, and there would be a two-story pedestrian arcade along the California St. frontage.

This alternative would be similar to the project in design and form, but the building tower would be about 120 ft. shorter than the proposed project. Land use effects of Alternative One would be similar to those of the proposed project except that the amount of office use would be reduced about 35%. As with the project, this alternative would not satisfy on-site any of the housing demand which would be generated by the office space.



**FIGURE 21: Alternative One –
No Transfer of Permitted
Basic Gross Floor Area**

SOURCE: Gensler and Associates, Architects

VII. Alternatives to the Proposed Project

Housing demand under this Alternative would be for about 190 units, about 100 fewer than for the proposed project. Urban design and shadow effects of this alternative would be reduced from the proposed project because of the decreased building height. The building tower would be more visible than the existing structure on the site. Pedestrian-level views from near the site would be similar to those of the project as proposed except for the shorter building height.

This alternative would result in demolition of the existing structure on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project, although the construction period would be shorter due to the decreased building size. Potential dewatering impacts would be increased under this alternative as two subsurface parking levels would be provided. Energy consumption from building operations would be reduced by about 35% in comparison to the proposed project.

Operational traffic impacts on street segments surrounding the site would be reduced under Alternative One, as travel in all modes would be about 45% less than for the proposed project. The parking deficit under Alternative One would be approximately 200 spaces. The estimated number of net peak-hour person-trips from this alternative would be about 500, in comparison to about 950 peak hour trips for the proposed project. Impacts on Muni and the regional carriers would be proportionately less than those from the proposed project and represent less than one percent of overall demand. Pedestrian flows would be similar to those from the proposed project. With two loading docks provided under this alternative, the occurrence of pedestrian conflicts with trucks and service vehicles would be less frequent than for the proposed project. The frequency of curbside loading for freight and passenger vehicles would be similar to, but less than, that of the proposed project.

The project sponsor has rejected this alternative because it would be an economic underuse of the site and because it would result in a building which the sponsor considers less attractive than the project as proposed. In order to develop the maximum floor area and retain the large floor sizes dictated by current market demands, the building would have a bulkier appearance than the project. In the context of the square buildings of similar height around the building, this alternative would contribute to a benched appearance of roof lines, and would not provide the same level of stepping in scale achieved with the project.

B. ALTERNATIVE TWO: GUIDING DOWNTOWN DEVELOPMENT - COMMERCIAL USE

This alternative would be designed to comply with the guidelines contained in Guiding Downtown Development (GDD) published by the Department of City Planning in July 1982. GDD contains a series of regulatory proposals for managing development in downtown San Francisco affecting size, design, use and location of major buildings. The report proposes changes in the City Planning Code regulations for the C-3 Planning Code Use Districts pertaining to housing, transportation, open space and historic preservation.

This alternative would be a 17-story office building, 240 ft. tall, 110 ft. less than the 350 ft. height limit proposed in GDD and 80 ft. less than the proposed project. The total area would be 233,200 sq. ft.: 219,500 sq. ft. of office, a 2,000-sq.-ft. lobby, 10,000 sq. ft. of retail and 1,625 sq. ft. of loading and service. About 192,000 gross sq. ft. would represent the GDD base commercial FAR of 12:1 for the site. In addition, the sponsor would purchase and transfer to the site, under Section 127(a) of the City Planning Code, about 31,000 sq. ft. of basic permitted floor area from Lot 16 of Assessor's Block 240. The transfer of basic permitted gross floor area under this alternative would be about 85,100 sq. ft. less than the amount proposed to be transferred to the site for the project. The transfer of floor area for Alternative Two would result in a total building FAR of about 14:1 (excluding retail and service area). Alternative Two would contain five retail establishments on the ground floor, with a maximum area of 2,000 sq. ft. each. Under GDD, this area would be exempt from FAR calculations. This alternative would also contain about 9,300 sq. ft. of recreation/open space: 1,875 sq. ft. in the pedestrian arcade along California St. and 7,400 sq. ft. in balconies at the 12th and 17th floors (public view and sun terraces). This area was assumed to be exempt from the FAR calculation, just as plazas, etc., are under the existing Planning Code.

This alternative would have about 110,000 fewer square feet of office area than the project, about 3,500 more sq. ft. of retail space, and about 6,600 more sq. ft. of recreational/open space. Mechanical equipment would be located in the basement and in a rooftop penthouse; the subsurface level would not extend beneath public sidewalks and a revocable encroachment permit would not be required. Under Alternative Two there would be no off-street parking for passenger vehicles to comply with GDD guidelines and Master Plan policies which discourage the addition of new long-term and short-term

VII. Alternatives to the Proposed Project

parking facilities in the Downtown core area. Two loading docks would be provided at grade from Spring St. to comply with the recommendations for off-street loading contained in GDD and the recommendations of City Planning Commission Resolution No. 9286.

This alternative would be built to lot lines on floors one through 11, with floor areas of 15,500 sq. ft. per floor (excluding the first and second floors, which would be smaller because of the two-story pedestrian arcade - see Figure 22, p.110). The building would step in from Kearny and Spring Sts. at the 12th floor (top of the mid-tower zone) as recommended by GDD bulk limits. Floor areas would be 11,500 sq. ft. per floor. The top (17th) floor would step in again on the north and south sides of the tower, and would contain 8,100 sq. ft., the maximum allowed under GDD. The roof-top mechanical floor would have sloping sides forming 50 degree angles to the roof line, as recommended by GDD guidelines for interesting roofs.

This alternative would provide the base amount of commercial space permitted in GDD plus the transfer to the site of about 31,000 sq. ft. of basic permitted floor area from the adjacent parcel, Lot 16. The GDD guidelines specify that housing be provided at the rate of 640 sq. ft. of housing per 1,000 sq. ft. of office space, with a unit requirement of 0.9 units per 1,000 sq. ft. of office space. Using this formula, approximately 140,500 gross sq. ft. of residential space (about 198 dwelling units) would meet the proposed housing provision. If this amount of residential space were developed on the site it would represent an FAR of about 9:1, 4:1 more than permitted by GDD. Required housing would be constructed off-site. See Alternative Three, p.112, for a discussion of an on-site housing alternative.

This alternative would incorporate art work into the lobby areas of the building. The proposed art requirement in GDD specifies that investment in art be equal to at least one percent of total construction costs. The proposed guidelines recommend the provision of non-residential recreation and open space, in a ratio of one sq. ft. of recreation/open space per 25 sq. ft. of new building area, which may be provided in a variety of ways. As noted, this alternative would contain a two-story pedestrian arcade and sun and view terraces in excess of the requirement of about 8,900 sq. ft.

Land use effects of Alternative Two would be similar to those of the proposed project except that the amount of office space would be reduced about 30% and the amount of ground-floor retail space would be increased about 54%. The housing demand generated

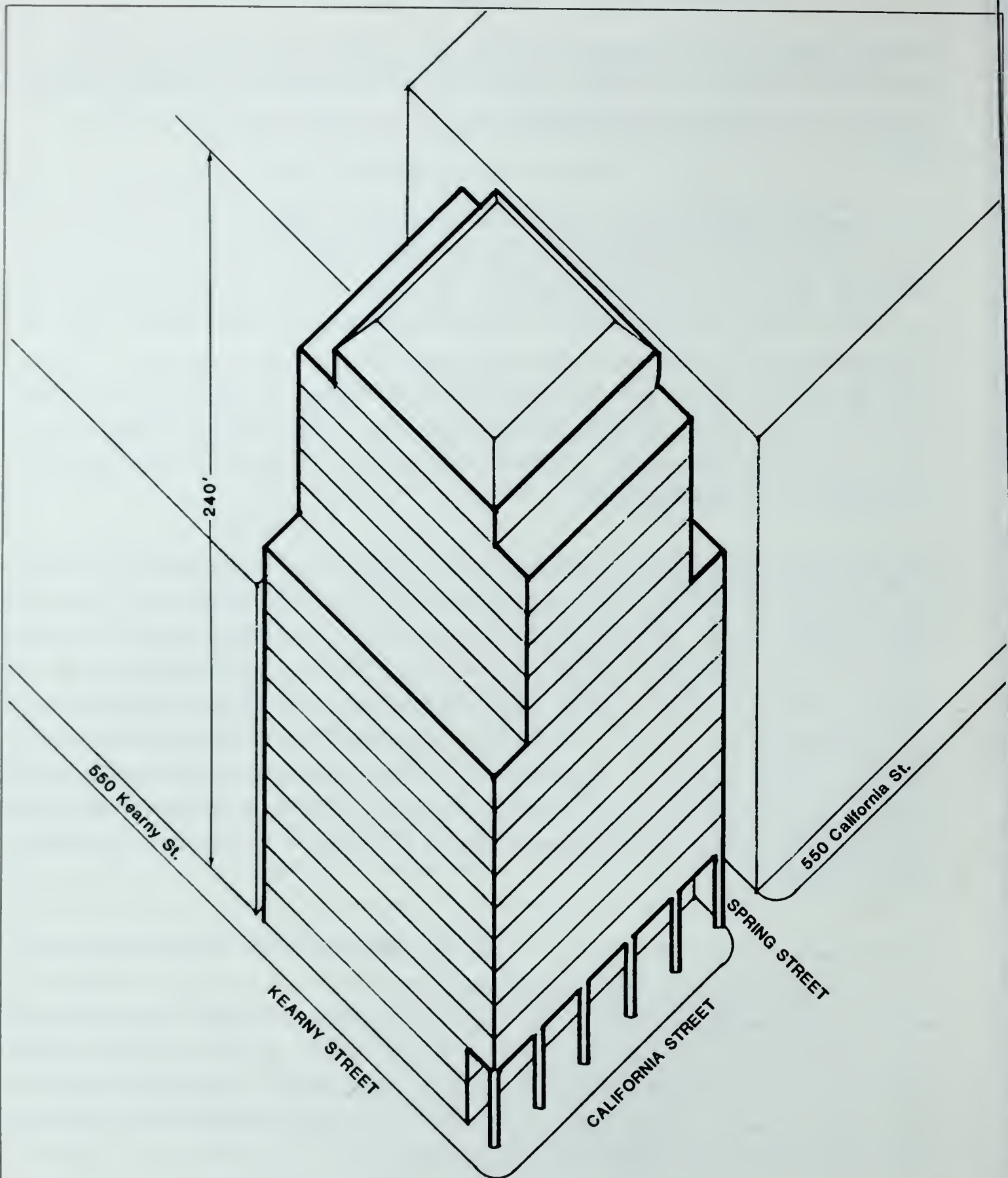


FIGURE 22: Alternative Two -
Guiding Downtown
Development - Commercial
Use

SOURCE: Gensler and Associates, Architects

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by this alternative, about 198 residential units, would be about 50 fewer than the project demand of about 290 units. The building tower would be about 80 ft. lower in height than the project, but more visible than the existing structure on the site. Shadows cast by this alternative would be about 25% shorter than project shadows, and reduced in width at the furthest points because of setbacks. The setback at the 12th floor (at the 150-ft. height level of this alternative) would provide a visual relationship to the 11- and 13-story buildings adjacent to the project site.

As with the proposed project, this alternative would result in demolition of the existing structure on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to those for the proposed project. Energy consumption for building operations under Alternative Two would be about 30% less than for the proposed project.

Operational traffic impacts would be similar to the proposed project. The number of net peak-hour person-trips (440) created under this alternative would be about 40% less than the number which would be generated by the proposed project (950). Relative impacts on Muni and the regional transit carriers would be proportionate and represent less than one percent of overall demand. Pedestrian flows would be reduced about 20% from those of the proposed project. No off-street parking would be provided; this alternative would eliminate any potential conflicts between pedestrians and vehicles in the curb cut of the project's garage ramp and reduced at Spring St. Pedestrian/traffic/transit conflicts would be reduced with this alternative. The estimated demand for parking would be for 235 spaces, 195 long-term and 40 short-term (less than 6 hours). With two loading docks provided, the occurrence of pedestrian conflicts with trucks and service vehicles and curbside loading would be less than that of the proposed project.

The project sponsor has rejected this alternative because it would not maximize the allowable developable area on the site, and as such, would be an economic underuse of the site. The sponsor has also rejected this alternative because publically accessible open space at the 12th and 17th levels could present a security problem and negatively influence marketability. The sponsor believes that the project would constitute an attractive contribution to San Francisco's office district, and that conforming to bulk limitations in GDD are not necessary to achieve a high quality design. Further, the sponsor believes that the project already responds to important recommendations contained in GDD: the project would incorporate a stepped design at the roof, and three loading stalls.

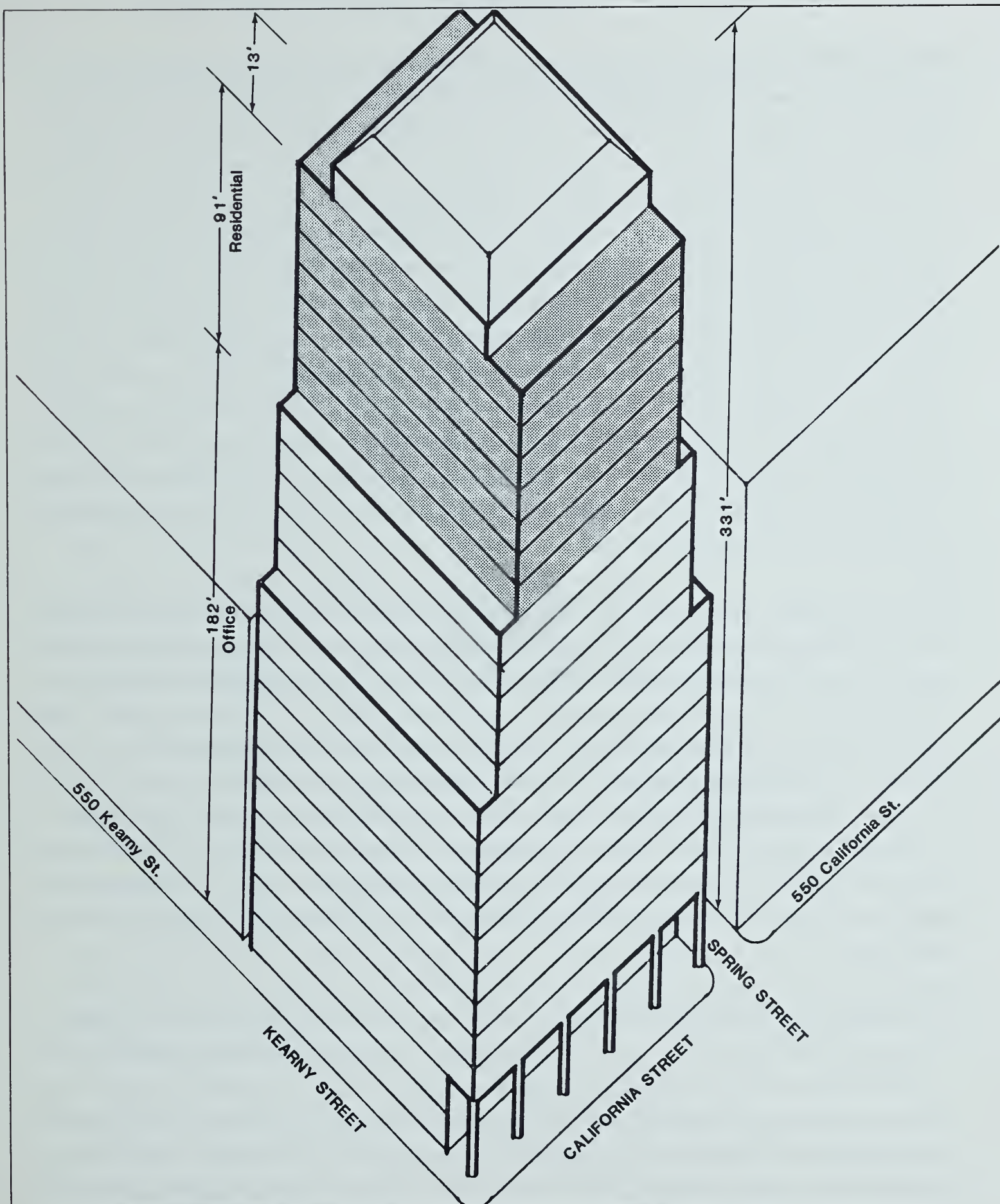
C. ALTERNATIVE THREE: GUIDING DOWNTOWN DEVELOPMENT - MIXED-USE

This alternative would be designed to comply with the guidelines contained in Guiding Downtown Development (GDD) published by the Department of City Planning in July 1982. Alternative Three would include development of on-site housing.

This alternative would be a 24-story combined office and residential building, approximately 330 ft. tall. The structure would contain about 217,000 gross sq. ft. of office space (192,000 sq. ft. representing the GDD base commercial FAR of 12:1 for the site and 25,000 sq. ft. transferred from the 550 Kearny St. building), 10,000 sq. ft. of retail space, and about 12,100 sq. ft. of open space. (Bulk limitations in GDD would preclude transfer of the total 31,000 sq. ft. of unused development rights from Lot 16 under the 12:1 FAR.) Office space would be about 50,000 sq. ft. less than the office space proposed for the project. Retail space would be increased about 3,500 sq. ft. Residential use, consisting of 73 condominiums, would occupy about 80,000 gross sq. ft. for an additional FAR of 5:1. The overall FAR of this alternative would be about 19:1 (excluding retail and open space/recreation area, which would be exempt from the FAR calculation. This alternative would be 330 ft. high, about 10 ft. taller than the proposed project, and 20 ft. less than the 350 ft. height limit for the site recommended in GDD (see Figure 23, p. 113).

This alternative would include two levels of subsurface parking, accessible via Spring St., accommodating about 80 vehicles (one space per residential unit). All parking would be allocated for the residential units; there would be no parking for the commercial portion of the building. The parking level would not extend beneath public sidewalks and a revocable encroachment permit would not be required. Two loading docks would be provided at grade from Spring St. to comply with the recommendations for off-street loading contained in GDD and the recommendations of City Planning Commission Resolution No. 9286.

Alternative Three would include separate lobby and elevator access to the residential and office portions of the building. The ground floor would have five retail establishments with a maximum of 2,000 sq. ft. each (this area would not be counted toward the FAR under GDD). The second floor would contain a 4,500 sq. ft. cultural facility and office uses. The building would contain 14 and one-half floors of office space and eight floors of housing, for a total of 24 stories. Mechanical equipment would be located in the basement level and in a rooftop penthouse.



LEGEND



Residential Use

SOURCE: Gensler and Associates, Architects

**FIGURE 23: Alternative Three –
Guiding Downtown
Development – Mixed Use**

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This alternative would be built to lot lines on floors one through 11, with floor areas of 15,500 sq. ft. per floor (excluding the first and second floors, which would be smaller because of the two-story pedestrian arcade - see Figure 22). The building would step in from Kearny and Spring Sts. at the 12th floor (top of the lower-tower zone) as required by GDD bulk limits. Floor areas would be 13,800 sq. ft. per floor on floors 12 through 16. A third step would be located above the 16th floor (top of the mid-tower zone); floors 17 through 23 would contain about 10,300 sq. ft. The top (24th) floor would step in again on the north and south sides of the tower, and would contain 8,100 sq. ft., the maximum allowed under GDD. The roof-top mechanical level would have sloping sides forming 50 degree angles to the roofline, as recommended by GDD guidelines for interesting roofs. According to Section 134 of the City Planning Code, a 25% rear yard would be required at each residential level in this C district. GDD includes a provision to allow the City Planning Commission to reduce this requirement, provided adequate light and air were maintained. Because of the setback at the 12th and 17th floors, it is assumed that this alternative meets this provision.

This alternative would provide the base amount of commercial space permitted in GDD plus 25,000 sq. ft. of transferred floor area from an adjacent parcel. The GDD guidelines specify that housing be provided at the rate of 640 sq. ft. of housing per 1,000 sq. ft. of office space, with a unit requirement of 0.9 units per 1,000 sq. ft. of office space. Using this formula, approximately 140,000 gross sq. ft. of residential space (about 195 units) would meet the proposed housing provision, representing an FAR of about 9:1. As the site's entire allowable developable floor area under GDD would be built, this amount of residential space could not be accommodated on the site. If 80,000 sq. ft. of housing were provided on-site, for an additional FAR of 5:1, about 60,000 sq. ft. of housing (or 122 units) would have to be constructed off-site to meet the recommended total housing provision.

This alternative would incorporate art work into the ground floor of the building to respond to the proposed art requirement in GDD. Open space for building residents would be provided by private balconies for individual condominiums to satisfy the usable open space requirements of Section 135 of the City Planning Code. The proposed guidelines recommend the provision of non-residential recreation and open space, which may be provided in a variety of ways. This alternative would contain a two-story pedestrian arcade (about 1,900 sq. ft.), sun and view terraces (about 5,800 sq. ft.), and a cultural

VII. Alternatives to the Proposed Project

facility on the second floor (about 4,500 sq. ft.) to satisfy the requirement of about 10,100 sq. ft. GDD would allow residential open space to partially satisfy the open space requirement for a mixed-use building.

Land use effects of Alternative Three would differ from the project as proposed; the amount of office space would be reduced about 34%, the amount of retail space would be increased about 54% and residential use would be developed on-site. The housing demand generated by this alternative would be for about 195 residential units, approximately 100 fewer than the demand which would be created by the proposed project; this demand would be partially met by the 73 housing units which would be included under Alternative Three. Through the provision of housing, this alternative may contribute to increased 24-hour activity in the Financial District and increased demand for domestic-oriented retail services in the downtown. The building tower would be more visible than the existing structure on the site, and about 10 ft. taller than the proposed project. The effect of this alternative on shadow patterns in the site vicinity would be a minor increase in length of shadows compared to project shadows because of the increased building height, and a reduction in the width of shadows due to setbacks at the 12th, 17th and 24th floors. The setback at the 12th floor (at the 150-ft. height level of this alternative) would provide a visual relationship to the 11- and 13-story buildings adjacent to the project site.

As with the project, this alternative would result in demolition of the existing structure on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project. Energy consumption for the office portion of the building under Alternative Three would be about 34% less than for the office portion of the project. Residential energy consumption would also occur for Alternative Three. Residential uses commonly consume about the same amount of natural gas and about twice as much electricity, on a per sq. ft. basis, as office uses. For this alternative, total electrical consumption would be about the same as for the proposed project, while natural gas use would be about 20% less; total energy consumption for Alternative Three would be similar to the project.

Operational traffic impacts and Muni impacts would be about half those of the proposed project due to decreased office space and no on-site parking spaces for office users. The number of net peak-hour person-trips (560) from this alternative would be about 40% less than for the proposed project (950). The number of transit trips regional carriers would be less about half those generated by the project and represent less than one percent of overall demand. Pedestrian flows on sidewalks adjacent to the building would be altered

VII. Alternatives to the Proposed Project

from project conditions; the reduced amount of office space under Alternative Three would lessen peak-hour pedestrian travel from the site. Peak-hour trip directions to the parking facility would be reversed from those with the project; total trips to the parking facility would be increased because of the increase in parking spaces under this alternative. The parking deficit (for work-related parking demand) would be greater than that of the proposed project by approximately 35 automobiles. The occurrence of curbside loading would be similar to project conditions. Pedestrian and service vehicle conflicts would be reduced in comparison to the proposed project because only two off-street loading spaces would be provided under Alternative Three. Conflicts between pedestrians and autos using the residential parking spaces would be increased.

The project sponsor has rejected this alternative because it would not allow the development of the allowable maximum developable area and so would be an economic underuse of the site, and because the sponsor feels that the site is not a suitable location for residential use.

D. ALTERNATIVE FOUR: NO PROJECT

This alternative would entail no change to the site. The existing Fireman's Fund Building would be retained. As the present office tenants intend to vacate the property at the end of 1982, it would be expected that the building would be occupied by new tenants and remain in office use.

In general, the environmental characteristics of this alternative would be substantially as described in the Environmental Setting Section of this report (see Section III, pp.20-42, for a discussion of existing conditions). Transportation, air quality and noise impacts associated with building construction would not occur. Transportation, transit and air quality conditions (described in Section IV of this report) as 1985 base conditions with cumulative development, but without the project, would exist on streets around the site in 1985. There would be no change in the demand from the site for community services.

This alternative would preserve options for future development of the site. It is not acceptable to the project sponsor because it would not maximize the allowable developable area and so would be an economic underuse of the site.

VII. Alternatives to the Proposed Project

This alternative could result in the development of other office space, possibly a high-rise building comparable to the project at another location. Development elsewhere in Downtown San Francisco would generally result in impacts as described for the project. The impacts of such a building, if developed at a location outside of San Francisco, would largely depend upon the location chosen and cannot now be accurately determined. Development of the project at a different location has been rejected by the project sponsor because of existing interests in the site and the sponsor's conviction that the project site is a prime location for office space in the San Francisco.

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X. APPENDICES

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APPENDIX A: FINAL INITIAL STUDY*

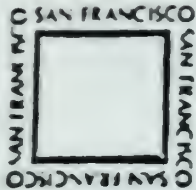
580 CALIFORNIA STREET OFFICE BUILDING

SAN FRANCISCO

81.705E

April 1982

* Differences among data presented in the following Initial Study and the preceding Focused EIR are attributable to the availability of additional and more precise data during the subsequent preparation of the EIR.



DEPARTMENT OF CITY PLANNING

100 LARKIN STREET - SAN FRANCISCO, CALIFORNIA 94102

(415) 552-1134

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: April 23, 1982

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Diane Oshima

Tel: (415) 552-1134

Project Title: 81.705E

Project Sponsor: Gerald D. Hines Interests

580 California Street Office Building

Project Contact Person: James Buie, Jr.

Project Address: 580 California Street, Northeast corner of California and Kearny Sts.

Assessor's Block(s) and Lot(s): Assessor's Block 240, Lot 7

City and County: San Francisco

Project Description: Demolish one four-story building and construct a 23-story, 320-foot tall office building containing about 340,000 sq. ft. of space, including about 10,000 sq. ft. of ground-floor retail banking and other retail uses.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: May 3, 1982.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a \$35.00 filing fee.


Alec S. Bash, Environmental Review Officer

580 CALIFORNIA STREET OFFICE BUILDING
INITIAL STUDY
81.705E

PROJECT DESCRIPTION

Gerald D. Hines Interests proposes to construct an office building in the Financial District of San Francisco at the northeast corner of California and Kearny Sts. The project site, opposite the Bank of America Headquarters Building, is Lot 7 in Assessor's Block 240. The 16,000-sq.-ft. site is a rectangle with frontages of 124 ft. on California St. and 128 ft. along Kearny and Spring Sts.

The project would replace the four-story Fireman's Fund Insurance Building, built in 1950. The proposed 23-story building would be about 320 ft. high and contain approximately 340,000 gross sq. ft. of space including about 10,000 gross sq. ft. of ground-floor retail banking and other retail uses. The proposed project would contain one subsurface parking level accessible from Spring St. with approximately 45 parking spaces. Three off-street loading docks would be accessible at grade from Spring St. to comply with the requirements of City Planning Commission Resolution No. 9286 dated January 21, 1982.

The basic Floor Area Ratio (FAR) of 14:1 permitted under Section 124 of the City Planning Code in the C-3-0 District would allow development of about 224,000 sq. ft. on the project site. Under Section 127(a) of the Code, the project sponsor intends to purchase and transfer to the site about 69,000 sq. ft. of basic permitted floor area from the Cahill property on Lot 16 of Assessor's Block 240 and about 47,000 sq. ft. of basic permitted floor area from the Utah International property on Lot 18 of Assessor's Block 240. These transfers, totalling about 116,000 total gross sq. ft., would result in a building on the site containing about 340,000 gross sq. ft. with an FAR of about 21.3:1.

The California St. frontage, which would provide access to the main lobby and elevator banks, would feature a pedestrian arcade outside the building. Access to ground-floor retail space would be provided from Kearny and Spring Sts. The upper 22 floors would contain about 330,000 sq. ft. office space.

The site is in the C-3-0 Downtown Office District and the 320-I Height and Bulk District. This would permit a building up to 320 ft. tall. Above 150 ft. in height, the maximum length could be 170 ft. and the maximum diagonal could be 200 ft.

The total construction period would be about 24 months, beginning with the demolition of the existing building. Initial occupancy of the building would be in late 1984 or early 1985.

POTENTIAL ENVIRONMENTAL EFFECTS

The proposed project at 580 California St. is examined in this Initial Study in order to determine potential effects on the environment. Potential environmental issues resulting from the proposed project include: circulation requirements, and project and cumulative effects on existing vehicular and transit systems, on pedestrian ways, and on parking; urban design considerations and shadow effects; housing impacts generated by increased

employment; construction noise; wind effects; air quality impacts associated with project-generated traffic; and energy consumption. These issues will be analyzed in detail in an environmental impact report (EIR) which will be prepared for the project. It was determined in this Initial Study that some potential impacts were either insignificant or that they would be mitigated through measures incorporated in the project design. The following items require no further environmental analysis.

Land Use Compatibility: The project would be consistent with existing land uses in the vicinity of the site and would comply with the height and bulk provisions of the City Planning Code.

Visual Quality: The proposed building would not block views of Downtown San Francisco and would not be a prominent feature on the skyline as the site is generally surrounded by taller developments. No glare would be generated by the proposed building.

Population/Employment/Housing: The proposed project would not displace any existing businesses or jobs.

Noise: After completion, project operation would not increase audible noise levels in the project vicinity.

Public Services and Utilities: The increased demand for public services and utilities attributable to the project would not require additional personnel or equipment.

Biology: The project would not have an effect on any plant, animal life or habitat as the site is completely urbanized.

Land: Excavation and grading would be required as part of construction. Soils at and below the foundation level are primarily dense sandy soils above bedrock and pile driving would not be required. Dewatering may be necessary only during the construction period. Measures included in the project which would mitigate potentially hazardous geologic or soil conditions on the site are included on p. 16.

Construction-Related Air Quality: Construction of the proposed project would have short-term effects on air quality in the project vicinity. Mitigation measures included in the project would reduce these effects to insignificant levels.

Hazards: The site and the project would neither cause nor be affected by hazardous uses or health hazards. A mitigation measure is included on p. 17 to reduce any possible conflicts with the City's emergency response plans.

Cultural Resources: No cultural or historical resources are known to be on the site. A mitigation measure is included on p. 17 to reduce impacts, should any subsurface artifacts of historical interest be found during excavation.

A. GENERAL CONSIDERATIONS

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc</u>
1. Would the project conflict with the objectives and policies in the Comprehensive Plan (Master Plan) of the City?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
2. Would the project require a variance, or other special authorization under the City Planning Code?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
3. Would the project require approval or permits from City Departments other than DCP or BBI, or from Regional, State or Federal agencies?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
4. Would the project conflict with adopted environmental plans and goals?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

The project, which would provide new office space in the Downtown core on a site that is close to local and regional transit facilities, would be generally consistent with the goals and objectives of the San Francisco Master Plan. It would respond to Objective 6 of the Commerce and Industry Element of the Comprehensive Plan to support San Francisco as "prime location for financial, administrative, corporate, and professional activity." The project would be consistent with Policy 2 of Objective 6 of the Commerce and Industry Element to "maintain a compact downtown core" and Policy 4 of Objective 6 to provide "amenities for those who live, work and use the Downtown".

The project would be light in color and feature bay style windows. The proposed tiered roofline is intended by the architect to give a sculptured form to the upper portion of the building. The project design would respond to Policy 2 of the Urban Design Element, Policies for Major New Development, to "avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance."

The project would provide new parking in the downtown control area and thus would not respond to Objective 1, Policy 4 of the Transportation Element, which discourages the provision of new long-term parking facilities in the downtown core. The proposed subsurface parking level would extend beneath the California St. and Kearny St. sidewalks. This would require a variance from Section 155(b) of the City Planning Code, which requires every off-street parking space to be provided entirely on private property. A revocable encroachment permit, to allow subsurface parking beneath public sidewalks, would be applied for with the building permit. The Departments of City Planning and Public Works would make a recommendation to the Board of Supervisors who would then hold a public hearing on the encroachment permit application; the encroachment permit would require final approval from the Board of Supervisors.

Under Section 127(a) of the City Planning Code, the proposed project would transfer to the site a total of about 116,000 gross sq. ft. of basic permitted floor area from two adjacent lots on Assessor's Block 240. This would allow the proposed building to have an FAR of 21.3:1 as of right; no special action

would be required of the City Planning Department or Commission. Upon purchase of the permitted gross floor area, notice of the transfer would be recorded with the deeds of all the properties affected.

B. ENVIRONMENTAL IMPACTS:

Yes Maybe No N/A Disc.

1. Land Use. Would the proposed project:

a. Be different from surrounding land uses?

_____ X _____ X

b. Disrupt or divide the physical arrangement of an established community?

_____ X _____

Existing land uses near the project site are generally office buildings with ground-floor retail banking operations; there is one retail food establishment on California St. on the project block. The ground-floor commercial uses of the proposed structure could include retail banking. To the extent that the new uses are other than retail banking or retail food outlets, they would be different from most existing ground-floor uses in the area, but would be compatible with the C-3-0 zoning designation, which permits other commercial uses, including retail stores.

2. Visual Quality and Urban Design. Would the proposed project:

Yes Maybe No N/A Disc.

a. Obstruct or degrade any scenic view or vista open to the public?

_____ X _____

b. Reduce or obstruct views from adjacent or nearby buildings?

X _____ X

c. Create a negative aesthetic effect?

_____ X _____ X

d. Generate light or glare affecting other properties?

_____ X _____ X

The 320-ft. tall project would be consistent with the height limit for the site and comparable to the scale of neighboring development. The proposed building would be about 460 ft. shorter than the Bank America Building, directly south of the site, and about 150 ft. shorter than 650 California St., one half block to the west. The project would be similar in height to the Liu Chong Hing Bank, diagonally across California St. The project would be about 180 ft. taller than 550 California St. directly east of the site across Spring St., about 220 ft. taller than the Federal Home Loan Bank Building to the west across Kearny St., and about 200 ft. taller than 550 Kearny St., directly north of the site.

The project would not obstruct any scenic views or vistas now available to the public and would not be a prominent feature on the skyline as the site is surrounded by taller buildings to the east, south and west. The project would be visible from the north on Telegraph Hill blocking some views of the lower portion of the Bank of America Building. The project would block some short-range views from the buildings nearby; view blockage would not be extensive, particularly from surrounding taller developments. The project would block views to the north from some of the floors of the Bank of America and Federal Home Loan Bank buildings. Views to the west would be blocked from

550 California St. Views to the east would be blocked from 650 California St., and to the northeast from the Liu Chong Hing Bank. The project would reduce pedestrian views across the site from the southern side of California St. looking toward Telegraph Hill. The building would contain no mirrored glass or high-intensity lighting and no glare would be generated by the project. The effects of view blockage and glare will not receive further discussion in the EIR.

The proposed project would change the appearance of the site by replacing a 60-ft.-high building with red brick facade, with a 320-ft.-high building with a ground-floor pedestrian arcade and a light colored facade. Further discussion, drawings of the proposed building and photographs of the site will be presented to the EIR to enable the reader to evaluate the aesthetic impact of the project.

3. Population/Employment/Housing. Would the proposed project:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Alter the density of the area population?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Have a growth-inducing effect?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
c. Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
d. Create or eliminate jobs during construction and operation and maintenance of the project?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
e. Create an additional demand for housing in San Francisco?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

The existing Fireman's Fund building is scheduled to be vacated by the Fireman's Fund Insurance Company in the fourth quarter of 1982. The company's 225 employees will be relocated from the site to Novato, in northern Marin County./1/ This relocation is not a result of the proposed project. The project would not require any relocation of other businesses in order to clear the site. Relocation from the project site will not be discussed in the EIR.

The project would increase the daytime population at the site by about 1,400 people. The project would generate approximately 500 person-years of construction employment jobs during construction and about 1,400 permanent jobs during building operation. The proposed project would have secondary impacts on the job market in the City and Bay Area region and would create an additional demand for housing in San Francisco. The increases in employment and housing demand attributable to the project will be discussed in the EIR.

NOTE - Population/Employment/Housing

/1/ City of Novato, Fireman's Fund/American Express San Marin Project
Final EIR, prepared by Environmental Science Associates, Inc., December, 1979.

4. Transportation/Circulation. Would the construction or operation of the project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. An increase in traffic which is substantial in relation to existing loads and street capacity?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>
c. Effects on existing parking facilities, or demand for new parking?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
d. Alteration to current patterns of circulation or movement of people and/or goods?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
g. Construction of new public roads?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>

Increased employment at the site would impose increased demands on all existing public and private transportation systems, including Muni, BART, Golden Gate Transit, AC Transit, SamTrans, and the Caltrans Peninsula Train. Existing pedestrian access and movement also could be changed. These impacts will be analyzed in the EIR.

The demand for vehicle parking generated by the project would not be met entirely by the proposed subsurface parking level or by existing parking near the project. The project would respond to City Planning Resolution No. 9286 by providing three off-street loading facilities. On-street loading space may be necessary at times, affecting circulation in the project area. The project would require curb cuts on Spring St. for access to the loading dock and subsurface parking level; vehicular access to the project could result in pedestrian-vehicle and vehicle-vehicle conflicts on Spring St. Project-related and cumulative transportation, circulation and parking impacts will be analyzed in the EIR.

5. Noise

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Would existing noise levels impact the proposed use?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
c. Are Title 25 Noise Insulation Standards applicable?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>

Project Construction

Project construction would require approximately 24 months and would involve demolition of the existing building, excavation, and construction of the proposed structure. Construction noise associated with site development would temporarily increase noise levels in the vicinity. Exterior noise levels could reach 85 dBA at 50 ft.; interior noise levels at structures adjacent to the site could reach 66 dBA with windows closed and 71 dBA with windows open. People in offices and retail establishments adjacent to the site would be the most sensitive receptors of construction noise. Construction noise impacts will be analyzed in the EIR.

Project Operation

The typical noise environment of downtown San Francisco is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicated a day-night average noise level (L_{dn}) of 75 dBA on California St. adjacent to the site in 1974./1,2/ The Environmental Protection Element contains guidelines for determining the compatibility of various land uses with different noise environments. For office uses the guidelines recommend no special noise control measures in an exterior noise environment up to an L_{dn} of 70 dBA. For this noise level, the guidelines recommend an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. The project sponsor has indicated that noise insulation measures would be included as part of the design. The proposed structure would not include housing and Title 25 Noise Standards would not, therefore, be applicable.

Project operation would not result in noise levels greater than those presently existing in the area. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the time of project completion, would cause traffic noise levels to increase by less than one dBA. To produce a detectable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development. Noise generated by loading activities at the site would be reduced because loading would primarily take place at an enclosed loading dock accessible from Spring St., rather than exclusively on the street as at present.

Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, San Francisco Municipal Code, Section 2909, "Fixed Source Noise Levels," which the project sponsor would be required to follow. The project site and surrounding area are zoned C-3-0. In this zone, the ordinance limits equipment noise levels at the property line to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between the hours of 10 p.m. and 7 a.m. During lulls in traffic, mechanical equipment generating 70 dBA could dominate the noise environment at the site. The project engineer and architect would include design features in the building to limit mechanical equipment noise levels to 60 dBA. As equipment noise would be limited to 60 dBA to meet the nighttime limit, it would not be perceptible within the sound-level context of the project. Mechanical equipment would be located in the rear of the building facing Spring St. and in the core and penthouse of the proposed project. Further discussion of operational noise will not be included in the EIR.

NOTES - Noise

/1/ dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound.

/2/ Ldn, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

6. Air Quality/Climate.

Would the proposed project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Violation of any ambient air quality standard or contribution to an existing air quality violation?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Exposure of sensitive receptors to air pollutants?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
c. Creation of objectionable odors?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
d. Burning of any materials including brush, trees, or construction materials?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

Air quality data collected by the Bay Area Air Quality Management District show that San Francisco experiences infrequent violations of the ambient air quality standards for ozone, carbon monoxide (CO) and total suspended particulates (TSP). Climatic conditions in San Francisco allow rapid dispersal of air pollutants, so that local stationary sources of emissions rarely create a measurable impact at monitoring stations. Rather, their impact is to add to regional accumulations of pollutants.

Two types of air quality impacts could be expected from this proposed project; short-term impacts from construction activity, and long-term impacts related to use and operation of the structure. Construction activities would temporarily affect local air quality. Dust emissions during demolition and excavation would increase particulate concentrations adjacent to the site. Dustfall can be expected at times on surfaces within 200 to 400 ft. of the site under low winds; under high winds, human discomfort may occur downwind from blowing dust. A mitigation measure, as described on p. 21, would reduce particulate emissions generated during construction activities; construction air quality effects will not be considered in the EIR.

Building emissions would arise from natural gas combustion and would be at roof level. Annual emissions from building operations would represent less than five percent of project-related emissions. Traffic generated by the proposed building would produce the primary air quality impact from the

project and would incrementally degrade air quality. Subsequent environmental documentation will be required to determine specific project-related and cumulative traffic air quality impacts.

The project, in combination with buildings nearby may increase local wind speeds and gustiness. A wind tunnel study will be performed to determine wind effects of the project; results of that study will be included in the EIR. The project could increase shadows on sidewalks along streets near the project; diagrams will be included in the EIR to assess increased shading from the proposed building.

7. Utilities and Public Services. Would the proposed project:

Yes Maybe No N/A Disc.

A. Have any effect upon, or result in a need for new or altered, governmental services in any of the following?

fire protection	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
police protection	<u> </u>	<u> </u>	<u> x </u>	<u> </u>	<u> X </u>
schools	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
parks or other recreational facilities	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
maintenance of public facilities	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
power or natural gas utilities	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
communications systems	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
water	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
sewer/storm water drainage	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
solid waste collection and disposal	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>

Fire

Fire protection services at the site are adequate to meet the needs of the proposed project under normal conditions./1/ A low and a high pressure fire hydrant are at the intersection of California and Kearny Sts. Additional hydrants are available within 100 ft. of the site./1/ The project would incorporate all emergency response systems stipulated by the Life Safety Code including fire alarms, an automatic sprinkler system, an emergency communication system, an emergency power supply and an on-site emergency water supply. These measures would reduce hazards to building occupants during an earthquake or fire.

Cumulative development in San Francisco will add additional office space to the downtown area. It can be anticipated that the number of fire incidents would increase as the number of people occupying the district increases. New high-rise buildings, which must comply with the Life Safety provisions of the San Francisco Building Code, are of Type 1 construction/2/, thus making the chance of a fire that would spread from building to building relatively small. On the average, replacing older, more vulnerable, low occupancy structures with higher quality, greater occupancy highrise buildings probably has no measurable effect on the need for fire protection./3/

Police

The project site is in the Central District of the San Francisco Police Department served by the station at 766 Vallejo St. The project would be in crime reporting area 342. The project area is served by a two-person patrol car 24 hours per day. The response time to a priority call at the project

site would be approximately two minutes. In 1981, 572 crimes were reported in the area of the project. The area had the 14th highest crime rate of the 26 areas served by the Central District Station, which is slightly above the median of 561 crimes. The range in the 26 reporting areas of the Central District was 22 to 3633 crimes. No additional personnel or equipment would be required by the police department for the project; however, cumulative growth in the site vicinity could increase the demand for police services. If statistics later indicate such a demand, additional personnel would be assigned to the area./4/

Parks and Recreation

The proposed project would create additional demand for recreational facilities in the project area. Several indoor recreational facilities are available within ten blocks of the site. St. Mary's Square Park, Portsmouth Square, and the Transamerica Redwood Park provide outdoor recreational and open space in the area. There is a plaza on the north side of the Bank of America Building, directly across California St. from the site.

Maintenance

The project would not create the need for additional maintenance of public facilities.

Electric and Natural Gas Utilities

Gas mains and electric power lines at the site are adequate to meet the needs of the project./5/ The project would conform to California Energy Commission standards for new non-residential buildings. The effect of cumulative development on existing energy capacities has not been quantified; however, Pacific Gas and Electric Company is required to provide energy to meet the needs of existing and future consumers.

Communications

Telephone services would be provided by the Pacific Telephone Company through the Pine-Bush Central Office. No additional improvements to existing equipment would be required./6/

Water

The proposed project would increase the consumption of water at the project site. It is estimated that the project would use 26,000 gallons of water per day (gpd) at full occupancy, increasing water use on the site by about 24,240 gpd. An 8-in.-diameter water main is located under California St. approximately 24 ft. south of the site. A 12-in.-diameter water main is located under Kearny St., approximately 26 ft. west of the site. These facilities would provide adequate service to the proposed project./7/ The only aspect of the water distribution system which may be affected by cumulative development is capacity; however, capacity of water mains is dealt with on a project specific basis./8/ Should insufficient capacity be evident (as determined by the Fire Department) an increase of the system capacity would be required at the expense of the project sponsor.

Sewers and Stormwater

The project site is served by 3-ft. by 5-ft. brick sewers in California and Kearny Sts. It has been recommended that the proposed building connect to the sewer system through the 16-in.-diameter sewer line in Spring St./9/ As part of the Cable Car Rehabilitation Program, the 3-ft. by 5-ft. brick sewer on California St. between Kearny and Montgomery Sts. will be replaced with a 12-in.-diameter vitreous concrete pipe./9/ The project would generate an estimated wastewater flow increase of about 24,240 gpd. The sewers serving the site have sufficient capacity to carry the additional load, and no improvements are expected to be required./9/ Wastewater is collected by a combined sewer system which carries storm flows as well as dry-weather flows. Storm flows are many times greater than dry-weather flows, consequently the sewer system is designed to carry many times the volume of sewage produced by City buildings. Project-generated wastewater flows represent about 0.04% of the average daily flows of 65 million gallons per day (MGD) currently being treated at the North Point Water Pollution Control Plant, and about 0.03% of the projected 85 to 90 MGD treatment capacity of the Southeast Water Pollution Control Plant which will go into interim operation in 1982. Flows to the North Point plant, which now serves the site, would be directed to the Southeast plant at that time.

Solid Waste Disposal

The project would generate about 0.7 tons of solid waste per day. The Golden Gate Disposal Company serves the existing building and anticipates no problems in meeting the collection requirements of the proposed building./10/ Disposal of municipal solid waste presently occurs at the landfill site in Mountain View. The contract with this facility expires in October 1983. The City is presently negotiating with other landfill sites to accept San Francisco's solid waste on an interim basis until a solid waste program is implemented in late 1986. The solid waste program is proposed to consist of intensified recycling, a resource recovery project generating electricity from the incineration of solid wastes, and landfill disposal of bypass and residual wastes from the resource recovery process. The project and cumulative development are not expected to present problems in solid waste disposal upon completion of the solid waste program./11/

NOTES - Public Services

/1/ Edward E. Murphy, Chief, Support Services. San Francisco Fire Department, letter communication, January 19, 1982.

/2/ Type I buildings have structural elements made of reinforced concrete, reinforced grouted masonry, reinforced hollow concrete masonry or steel; and the exterior walls, roofs, floors and some inner walls of "fire-resistive noncombustible construction." San Francisco Building Code Section 1801.

/3/ Information contained in this section is from Bendix Environmental Research, Inc., Environmental Consultants and Fire Protection Engineers, confirmed by Emmet D. Condon, Deputy Chief, San Francisco Fire Department, September 24, 1981.

/4/ Paul J. Libert, Sergeant, San Francisco Police Department, Crime Analysis, letter communication, January 19, 1982.

/5/ Alfred Williams, Industrial Power Engineer, Pacific Gas and Electric Co., telephone conversation, February 1, 1982.

/6/ Barney Parish, Business and Industry Consultant Division, Pacific Telephone Company, telephone conversation, February 1, 1982.

/7/ P. Dobooski for J.E. Kenck, Manager, San Francisco Water Department, City Distribution Division, letter communication, January 14, 1982.

/8/ Eugene Kelleher, General Manager and Chief Engineer, San Francisco Water Department, telephone conversation, January 5, 1982.

/9/ Nathan Lee, Engineering Associate II, Planning and Design Division, San Francisco Clean Water Program, letter communication, January 28, 1982.

/10/ Fiore Garbarino, Treasurer, Golden Gate Disposal Company, telephone conversation, February 1, 1982.

/11/ David Gavrich, Assistant Manager for Solid Waste Management, Chief Administrative Office, Special Projects, City of San Francisco, telephone conversation, January 6, 1982.

8. Biology

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	_____	_____	<u>X</u>	_____	_____
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	_____	_____	<u>X</u>	_____	_____
c. Would the project require removal of mature scenic trees?	_____	_____	<u>X</u>	_____	_____

9. Land. (topography, soils, geology) Would the proposed project result in or be subject to:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	_____	_____	<u>X</u>	_____	<u>X</u>
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	_____	<u>X</u>	_____	_____	<u>X</u>
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	_____	_____	<u>X</u>	_____	_____

No site specific soils analysis has been made. Geotechnical data available from the Bank of America Building across California St., the International

Building and St. Mary's Garage to the southwest, and the Hartford Building to the west across Kearny St., indicate that soils at and below the foundation level of the project site are primarily dense sandy soils above bedrock./1/ These deposits are suitable for shallow building foundations and pile driving would not be required. The type of support to be use for the proposed building has not been determined; mat or spread footings, straight shaft and belled piers are under consideration. Analysis of the site soils would be undertaken by a geotechnical consultant. The project sponsor would follow the recommendations of the geotechnical consultant in site development.

The only grading on the site would be related to foundation preparation. During excavation, pit walls would be shored up and protected from slumping or lateral movement of soils into the pit. Demolition of the existing structure and excavation would result in the removal of brick, concrete and debris from the site. Any material removed would be disposed of in an officially approved disposal site. Water is expected to be encountered near the basement elevation and dewatering may be necessary during construction./1/ The project would include measures to mitigate potential impacts associated with excavation and dewatering (see p. 22).

During construction, the project sponsor would be required to comply with the San Francisco Building Code and the California Occupational Safety and Health Agency. The Building Code specifies that "the foundation type for any building or structure shall be selected with due consideration given to subsurface conditions and requirements for the structural behavior." Additionally, the structural design of the building would be required to meet the minimum safety requirements for lateral seismic forces as required by the San Francisco Building Code. As the project would conform to these standards, no further analysis is needed in the EIR. Mitigation measures have been incorporated in the proposed project to mitigate possible geotechnical construction impacts (see p. 22).

NOTE - Land

/1/ Dames and Moore, Preliminary Geotechnical Study for Proposed Office Building, San Francisco, California, January 18, 1982.

10. Water.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
Would the proposed project result in:					
a. Reduction in the quality of surface water?	_____	_____	<u>X</u>	_____	<u>X</u>
b. Change in runoff or alteration to drainage patterns?	_____	_____	<u>X</u>	_____	<u>X</u>
c. Change in water uses?	<u>X</u>	_____	_____	_____	<u>X</u>
d. Change in quality of public water supply or in quality or quantity (dewatering) of groundwater?	_____	<u>X</u>	_____	_____	<u>X</u>

The project would not reduce the quality of surface water, change the amount of runoff from the site, or alter drainage patterns, because the site is now entirely covered with impermeable surfaces. The project would increase water

use on the site to an estimated 26,000 gallons per day (gpd). Current water use on the site is an average of 1,760 gallons per day gpd./1/

The water table is expected to be near the depth of the excavation./2/ Dewatering may be required during construction. If necessary, dewatering would be temporary and would take place only during foundation preparation activities. Dewatering would be done inside the building excavation; no dewatering would occur outside of the excavation. Drawdown of the groundwater level outside the excavation could produce some local subsidence which could damage the streets or older brick buildings in the immediate vicinity of the site. The groundwater level outside the excavation would be monitored during dewatering using groundwater observation wells. Due to the sandy texture of subsurface deposits, the groundwater level outside the excavation would not be appreciably lowered. The project would include measures which would mitigate potential impacts associated with excavation and dewatering (see p. 22).

NOTES - Water

/1/ William F. Newberry, Manager/Real Estate, American Express Company, letter, January 19, 1982.

/2/ Dames and Moore, Preliminary Geotechnical Study for a Proposed Office Building, San Francisco, CA, January 18, 1982.

11. <u>Energy/Natural Resources</u> . Would the proposed project result in:	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Any change in consumption of energy?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Substantial increase in demand on existing energy sources?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>

The building would be designed and constructed to conform with the energy requirements of Title 24 of the California Administrative Code so that energy use per square foot of floor area would be less than at present. Because of the greater building size, the project would increase the total amount of energy consumed at the site. Energy consumption and conservation will be discussed in the EIR.

12. <u>Hazards</u> . Would the proposed project result in:	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Increase risk of explosion or release of hazardous substances (e.g. oil, pesticides, chemicals or radiation), in the event of an accident or cause other dangers to public health or safety?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
b. Creation of or exposure to a potential health hazard?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
c. Possible interference with an emergency response plan or emergency evacuation plan?	<u> </u>	<u> X </u>	<u> </u>	<u> </u>	<u> X </u>

The project would increase the City's daytime population. Employees in the proposed building would contribute to congestion if an emergency evacuation of the Downtown Area was required. A measure to mitigate the effect of the project on the City's emergency response plan is included on p. 23.

13. Cultural. Would the proposed project:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Include or affect a historic site, structure or building?	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
b. Include or affect a known archaeological resource or an area of archaeological resource potential?	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> X </u>
c. Cause a physical change affecting unique ethnic or cultural values?	<u> </u>	<u> </u>	<u> X </u>	<u> </u>	<u> </u>

The site is inland of the original 1849 shoreline and no buried ships or other cultural resources are known to exist on the site./1/ Scattered artifacts of historic interest may be found; a mitigation measure included on p. 23 would protect cultural or historic resources found during construction.

The site contains no buildings rated to be of major architectural importance in the 1979 survey conducted by the Foundation for San Francisco's Architectural Heritage or included in the City's official list of Architecturally and/or Historically Significant Buildings, adopted by the City Planning Commission on May 29, 1980. The Fireman's Fund Building, which occupies the project site, was included in the Heritage survey but it was classified as "not rated". Buildings constructed after 1945, such as the Fireman's Fund Building, were not rated as to architectural importance. Discussion of cultural or historic factors will not be included in the EIR.

NOTE - Cultural

/1/ The San Francisco Maritime Museum has prepared an unofficial map which identifies the approximate locations of Gold Rush Ships (this map has not been updated since 1964).

C. MITIGATION

	<u>Yes</u>	<u>No</u>	<u>Disc.</u>
Are mitigation measures included in the project?	<u> X </u>	<u> </u>	<u> X </u>
Are other mitigation measures available?	<u> X </u>	<u> </u>	<u> </u>

Mitigation measures currently proposed as part of the project are listed below. Other mitigation measures may be identified during subsequent environmental review and will be included in the EIR.

NOISE

- The project contractor would muffle and shield intakes and exhausts, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.
- The project sponsor would perform an analysis of noise reduction requirement for the project and include noise insulation features in the building design. Such design features would include fixed windows and climate control.

AIR QUALITY/CLIMATE

- During excavation, unpaved demolition and construction areas would be wetted to hold down dust. This would be done at least twice a day; with complete coverage, particulate emissions (dust) would be reduced about 50%.
- The general contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions.

UTILITIES AND PUBLIC SERVICES

- To reduce the demand on police protection services, the project would incorporate internal security measures such as closed-circuit television cameras, internal security personnel, well lighted entries, alarm systems and computerized office entrances accessible only by pre-programmed magnetic keys.
- The project would incorporate low-flow faucet and toilet fixtures to reduce water consumption and wastewater volume.
- The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transportation.

LAND (Topography, Soils, Geology)

- A detailed foundation and structural design study would be conducted for the building by a California licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.
- If dewatering were necessary, groundwater observation wells would be installed to monitor the level of the water table and other instruments would be used to monitor potential settlement and subsidence. If, in the judgment of City engineers, unacceptable subsidence occurs during construction, groundwater recharge would be begun to halt the settlement. This might cause a delay in construction.
- Any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, to prevent sediment from entering the storm drain/sewer lines.

HAZARDS

- An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to insure coordination between the City's emergency planning activities and the project's plan and to provide services to building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

CULTURAL

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

D. ALTERNATIVES:

<u>Yes</u>	<u>No</u>	<u>Disc.</u>
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Were other alternatives considered?

<u>X</u>	<u> </u>	<u>X</u>
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Several alternatives to the project as proposed are under consideration. These alternatives will be discussed in greater detail in the EIR for the project.

Alternative One: No Transfer of Permitted Basic Gross Floor Area. This alternative would be an office building of similar design to the project, but would not include the transfer of permitted basic gross floor area from adjacent parcels. The basic FAR of 14:1 permitted by the City Planning Code would be developed on the site.

Alternative Two: Guiding Downtown Development - Commercial Use Only. This alternative would be designed to meet the criteria outlined in Guiding Downtown Development, published in May 1981 by the Department of City Planning. Under this alternative the base commercial FAR would be 12:1, as recommended in Guiding Downtown Development. The transfer of basic permitted gross floor area to the site from adjacent parcels would be used to increase the amount of office space, resulting in a total building FAR of 17:1, the maximum FAR recommended by the proposed guidelines. There would be no on-site parking provided for passenger vehicles under this alternative.

Alternative Three: Guiding Downtown Development - Mixed Use Alternative. This alternative would be designed to comply with the proposed guidelines contained in Guiding Downtown Development. This alternative would include the development of on-site housing and would not involve the transfer of basic permitted gross floor area to the site from adjacent parcels. Under

Alternative Three the commercial FAR would be 12:1 and an additional FAR of 5:1 would be developed for residential use; the overall FAR would be 17:1, the maximum FAR recommended by the proposed guidelines.

Alternative Four: No Project Alternative. This alternative would retain the existing structure on the project site.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

	<u>Yes</u>	<u>No</u>	<u>Disc.</u>
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<u> </u>	<u> X </u>	<u> </u>
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	<u> </u>	<u> X </u>	<u> </u>
3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable?	<u> X </u>	<u> </u>	<u> X </u>
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	<u> </u>	<u> X </u>	<u> </u>
5. Is there a serious public controversy concerning the possible environmental effect of the project?	<u> </u>	<u> X </u>	<u> </u>

The project would be expected to generate a demand for additional housing in San Francisco and would contribute to cumulative traffic increases in the Downtown. These concerns will be considered in the EIR to be prepared for the project.

APPENDIX B: LAND USE AND CUMULATIVE DOWNTOWN DEVELOPMENT

TABLE B-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO AS OF THROUGH 1981 IN GROSS SQUARE FEET

<u>Year</u>	<u>Total Gross Square Feet Completed</u>	<u>5-Year Total (Net)/a/</u>	<u>5-Year Annual Average (Net)/a/</u>	<u>Cumulative Total of All Office Buildings /b/</u>	<u>Cumulative Total of All Downtown Office Buildings /c/</u>
Pre-1960				<u>28,145,000</u>	<u>24,175,000</u>
1960	1,183,000				
1961	270,000				
1962	—				
1963	—				
1964	1,413,000				
1960-1964		2,866,000 (2,580,000)	573,200 (516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
1965-1969		8,379,000 (7,541,000)	1,675,800 (1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	—				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
1970-1974		8,615,000 (7,753,000)	1,723,000 (1,550,000)	46,019,000	42,048,000

(continued)

TABLE B-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO AS OF AUGUST 1, 1982, IN GROSS SQUARE FEET (Continued)

<u>Year</u>	<u>Total Gross Square Feet Completed</u>	<u>5-Year Total (Net)/a/</u>	<u>5-Year Annual Average (Net)/a/</u>	<u>Cumulative Total of All Office Buildings /b/</u>	<u>Cumulative Total of All Downtown Office Buildings /c/</u>
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	—				
1979	2,532,000				
1975-1979		8,157,000 (7,341,000)	1,631,400 (1,468,000)	53,360,000	49,389,000
1980	1,284,000				
1981	3,029,000				
1980-1981		4,313,000 (d) (3,881,700)	2,156,500 (d) (1,940,850)	57,243,000	53,270,700

(a) Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

(b) Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.

(c) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

(d) Two-year total and average.

SOURCE: Department of City Planning

TABLE B-2: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982*

Projects under Formal Review 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
58	82.234ED	Roundhouse
112	81.258	Ice House Conversion (C)
136	81.245	955 Front at Green
176	81.673	Columbus/Pacific Savoy
228	81.610ED	569 Sacramento (C)
240	81.705ED	580 California/Kearny
265	81.195ED	388 Market at Pine
269	81.132ED	Russ Tower Addition
270	81.175ED	466 Bush
288	81.461ED	333 Bush (Campeau)
288	81.687ED	222 Kearny/Sutter
669	81.667ED	1361 Bush (C)
716	81.581ED	Polk/O'Farrell
3702	81.549ED	1145 Market
3703	81.494ED	1041-49 Market
3707	81.492ED	90 New Montgomery
3707	81.245C	New Montgomery Pl.
3708	81.493ED	71 Stevenson
3733	82.29E	832 Folsom
3760	81.386	401 6th
3776	81.59	Welsh Commons
3778	81.630ED	548 5th/Brannan
3781	82.99E	Greyhound Bus Terminal
3786	82.33E	655 5th/Townsend
3789	82.31EV	615 2nd/Brannan (C)
9900	81.63	Ferry Building Rehab
9900	81.63	- Pier One Development
9900	81.63	- Agriculture Building

Approved Projects 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
106	81.415ED	1299 Sansome
161	80.191	Mirawa Center
164	81.631D	847 Sansome
164	81.573D	50 Osgood Place
166	CU81.7	222 Pacific (C)
166	80.15	750 Battery
206	81.165D	401 Washington at Battery

(continued on next page)

TABLE B-2: Continued*

Approved Projects 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
227	80.296	Bank of Canton
261	81.249ECQ	333 California
262	81.206D	130 Battery
267	81.241D	160 Sansome
268	81.422D	250 Montgomery at Pine
271	81.517	453 Grant
271		582 Bush
294	82.870	44 Campton Place
311	82.120D	S.F. Federal
351	DR79.24	Mardikian/1170-1172 Market
3512	82.14	Van Ness Plaza
3518	81.483V	291 10th St.
3705	80.315	Pacific III Apparel Mart
3709	81.113ED	Central Plaza
3715	82.16EC	121 Steuart
3717	80.349	Spear/Main (160 Spear)
3717	82.82D	135 Main
3722	81.548DE	466 Clementina (C)
3722	81.417ED	144 Second at Minna
3724	81.102E	Holland Ct. (C)
3729	82.860	774 Tehama
3733	81.2	868 Folsom
3735	80.106	95 Hawthorne (C)
3738	DR80.5	315 Howard
3741	82.203C	201 Spear
3749	81.18	Marathon - 2nd & Folsom
3751	77-220	National Maritime Union
3752	77-220	Office Bldg. (YBC SB-1)
3763	81.287V	490 2nd at Bryant (C)
3763	81.381	480 2nd at Stillman (C)
3775	81.147V	338-340 Brannan (C)
3776	81.693EV	539 Bryant/Zoe
3788	81.296Z	690 2nd/Townsend (C)
3787	81.306	252 Townsend at Lusk
3789	81.552EV	625 2nd/Townsend (C)
3794	81.569EV	123 Townsend
3803	81.244D	China Basin Expansion

Projects under Construction 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
163	81.1	901 Montgomery
164	81.251D	936 Montgomery-(disco)

(continued on next page)

TABLE B-2: Continued*

Projects under Construction 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
167		Golden Gateway III
196		736 Montgomery
196	CU79.49	Pacific Lumber Co.
208	81.104EDC	Washington/Montgomery
237	DR80.6	353 Sacramento (Daon)
239	DR80.1	456 Montgomery
240	DR80.16	550 Kearny
263	CU79.12	101 California
287	81.550D	Sloane Building (C)
288	DR80.24	101 Montgomery
289	81.308D	One Sansome
292	DR79.13	Crocker National Bank
312	79.370	50 Grant
351	79.133	U.N. Plaza
762		Opera Plaza
3702	81.25	1155 Market/8th
3708	80.34	25 Jessie/Ecker Square
3709	80.36	Five Fremont Center
3712	79.11	Federal Reserve Bank
3715		141 Steuart
3717	79.236	101 Mission at Spear
3717		150 Spear
3718	79.12	Pacific Gateway
3724		Yerba Buena West
3735		Convention Plaza

* Includes all office projects in the greater downtown area and the South of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in the Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City and the project is still in early planning stages.

** The letter (C) after a project refers to a conversion (generally industrial and/or warehouse space to office space).

SOURCE: Department of City Planning

TABLE B-3: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982*

<u>Status of Project</u>	<u>Office (Gross Sq. Ft.)</u>		<u>Retail (Gross Sq. Ft.)</u>	
	<u>Total New Constr.</u>	<u>Net New Constr.</u>	<u>Total New Constr.</u>	<u>Net New Constr.</u>
Under Formal Review	4,220,970	3,801,570	310,650	249,150
Approved	5,428,350	4,862,600	187,850	150,310
Under Construction	<u>7,753,050</u>	<u>7,427,350</u>	<u>260,250</u>	<u>136,000</u>
GRAND TOTALS	17,402,370	16,091,520	758,750	535,510

The list of projects shown in Table B-2 and the development totals shown in Table B-3 include all office projects in the greater downtown area and the south of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in plact), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail./1/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and, warehouse uses./2/ Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

(continued)

TABLE B-3: Continued

NOTES

/1/ Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning, May 28, 1982.

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning, certified November 5, 1980.

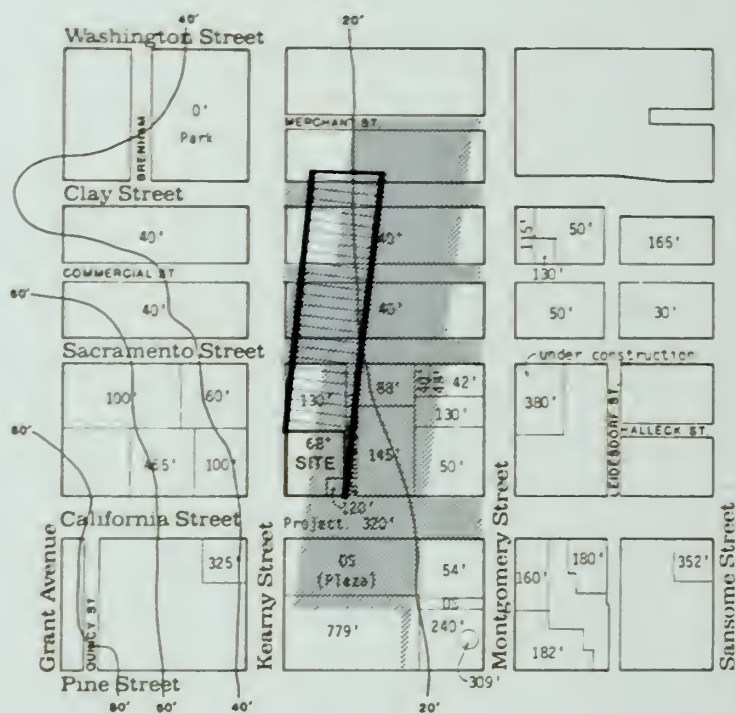
SOURCE: Department of City Planning

APPENDIX C: SHADOW DIAGRAMS

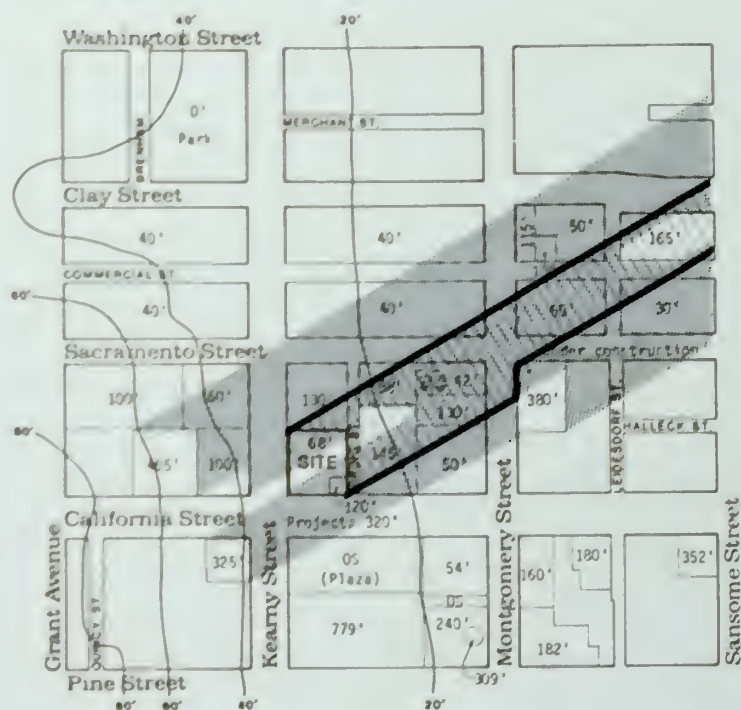


8 A.M.

12 Noon



4 P.M.

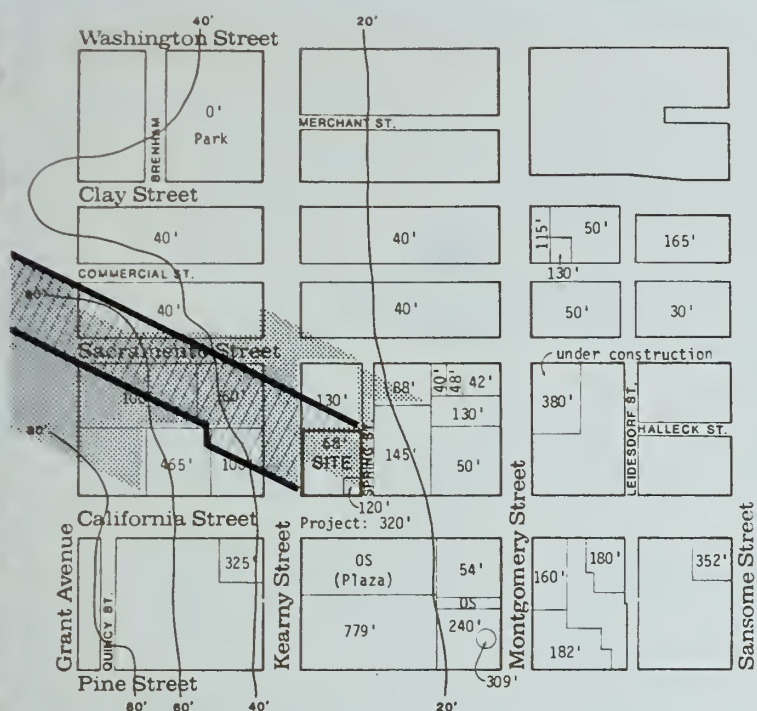


LEGEND

-  Existing Shadow
-  Project Shadow

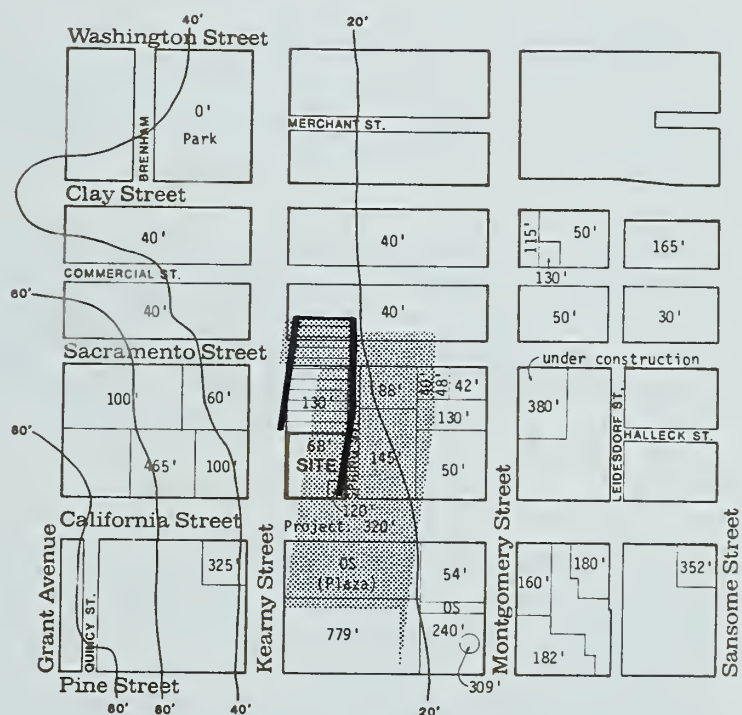
FIGURE C1: Existing and Project Shadow Patterns in Vicinity of Project, December 22nd

SOURCE: Environmental Science Associates, Inc.

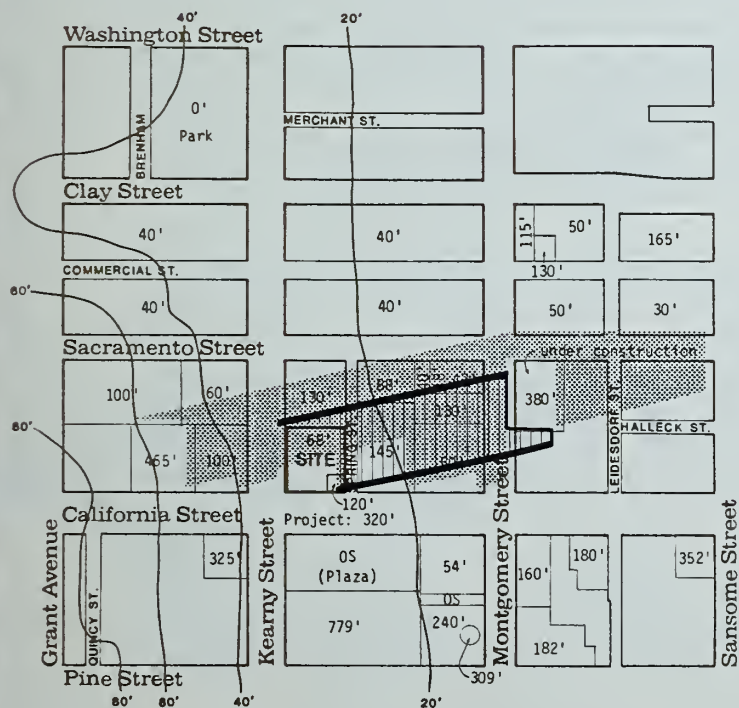


8 A.M./9 A.M.

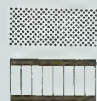
12 Noon/1 P.M.



4 P.M./5 P.M.



LEGEND



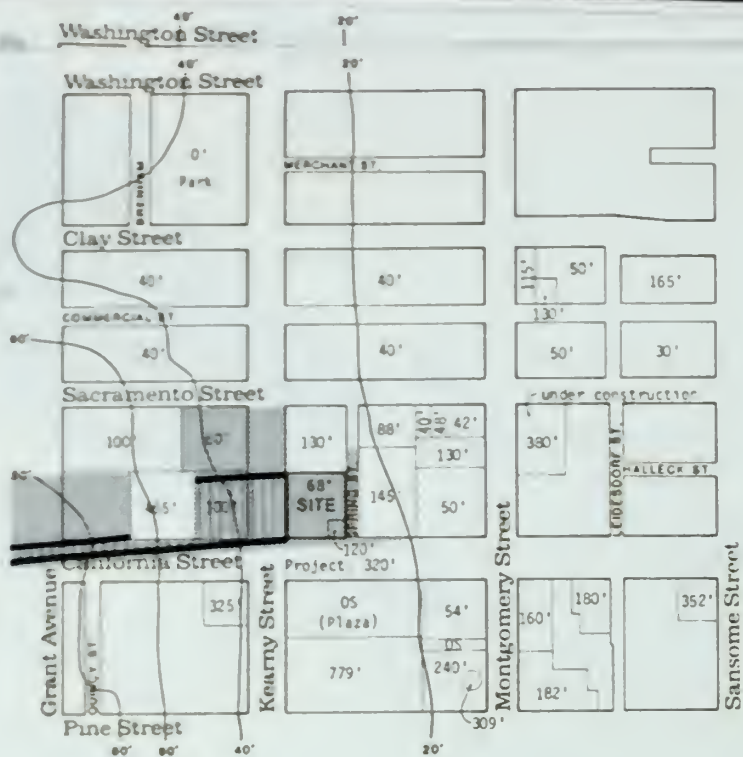
Existing Shadow

Project Shadow

Note: September shadows are Daylight Savings Time and therefore one hour later.

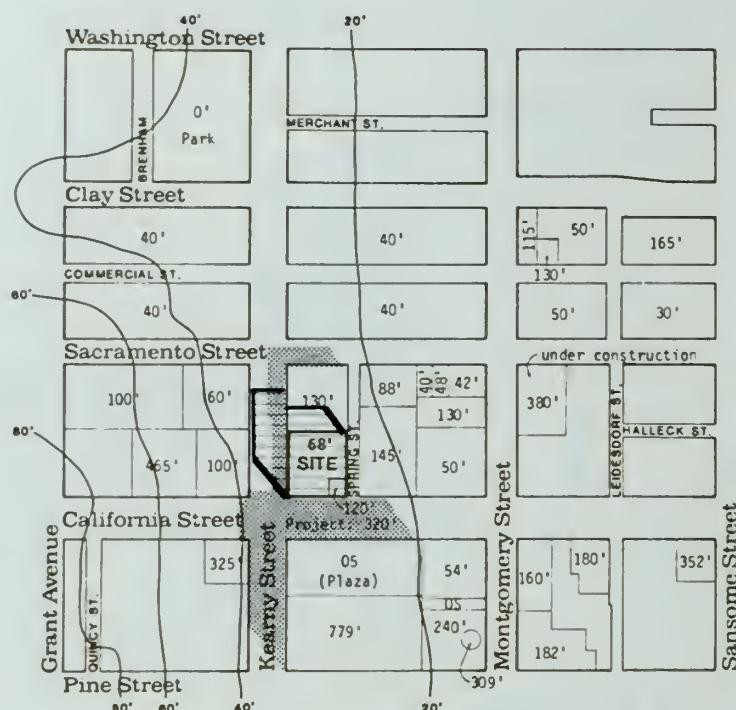
FIGURE C2: Existing and Project Shadow Patterns in Vicinity of Project, March 21st/ September 22nd

SOURCE: Environmental Science Associates, Inc.

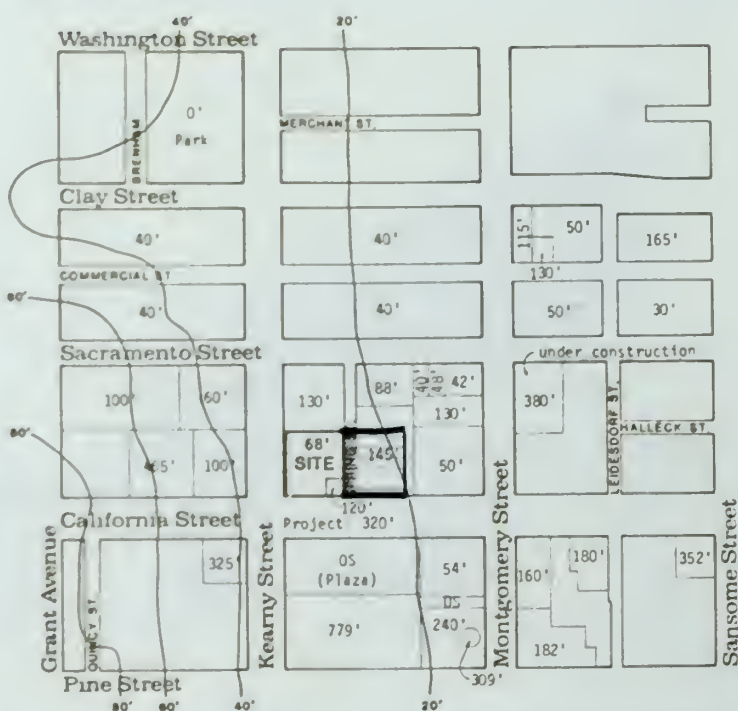


8 A.M.

12 Noon



4 P.M.



LEGEND

-  Existing Shadow
-  Project Shadow

Note: Daylight Savings Time

FIGURE C3: Existing and Project Shadow Patterns in Vicinity of Project, June 22nd

SOURCE: Environmental Science Associates, Inc.

APPENDIX D: WIND-TUNNEL STUDY

580 California Street Office Building
Initial Wind-Tunnel Study
prepared by Dr. Bruce White, Davis, California

I. MODEL AND WIND-TUNNEL FACILITIES

A 1:50 scaled model of the downtown San Francisco area surrounding the proposed building site for several blocks in all directions was provided by Environmental Science Associates, Inc. The model was capable of having three figurations (the existing setting, proposed project, and Alternative One) each available for separate wind-tunnel testing.

An environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high, and has an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development length allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

II. TESTING PROCEDURE

The wind study was divided into two parts: flow visualization and wind speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded, and prevailing wind directions were determined. Wind speed measurements were made at 21 surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm 5\%$ of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low-wind speeds. The calibration is accurate to $\pm 1\%$. The flow above the model was adjusted to nearly the same wind speed of 3.38 m/s (11.1 ft/sec or 7.56 mph) for all experiments. The ratio of near-surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for three prevailing wind directions (westerly, northwesterly, and southwesterly) for the existing setting, proposed project, and Alternative One. These wind conditions are the most common in San Francisco, and are

therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building site for all three wind directions and the three building settings.

III. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as normalized percentage of the freestream wind-tunnel speed where 1.0 represents a wind speed equal to 100% of the freestream value. The numerical ratios (called wind speed ratios) displayed on the following figures can be approximately interpreted by using the following scale presented in Table D-1. The assessment of wind impact on the site vicinity is preliminary and should be construed only as an estimate of the projected actual wind environment. The scale presented in Table D-1 is subjective.

TABLE D-1: RELATIVE INTENSITY OF SURFACE WINDS

<u>Intensity of Wind Speed</u>	<u>Wind Speed Ratio or Normalized Percentage of Freestream Speed</u>
Low	0.00 - 0.19
Moderately low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately high	0.50 - 0.69
High	0.70 - 1.00
Very high	over 1.00

It should be noted that the plotted values are not actual wind speeds, but ratios. Thus, a point having "very high" wind speed could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed could experience relatively high winds on a windy day.

West Wind

Setting. The near surface wind speeds are low (wind speed ratios of less than 0.19) at all measured locations except for a moderately low wind (wind speed ratio of 0.22) occurring on the north side of the Pine-Kearny Sts. intersection. Other wind features that characterize the existing wind environment for the setting are: (a) The Portsmouth and St. Mary's Squares experience low winds. (b) Winds west of Kearny St. on Pine and Bush Sts. are easterly and they are created by a large recirculating wind flow that is formed off of the downwind (east side) of Knob Hill. (c) A large turbulent wake is created downwind of the Bank of America Headquarters Building which extends many blocks downwind of the building.

Impact of project. The presence of the proposed building would create, in general, the same wind environment as presently exist. There would be, however, an effective 18% increase in wind speeds occurring at the intersection of California and Kearny Sts. Note, this increase would still result in low winds occurring at the intersection.

Alternative One. The alternative building would result in essentially the same wind environment as presently exists with a strong majority of measured winds remaining low.

The above results would be due to the presence of many massive buildings directly downwind of the building site. Such a situation results in relatively low winds around the building site. This is observed on the wind speed ratio figures for all conditions (setting, project and Alternative One).

Northwest Wind

Setting. The near surface wind speeds are low and moderately low at all measured locations except for a southerly moderate wind along Kearny St. just west of the existing building. Other wind features that characterize the wind environment are: (a) The Portsmouth and St. Mary's Squares experience low and moderately low winds. (b) Two vertical vortices are formed off of the northeast and southwest corners of the 650 California St. Building. These vertical vortices cause a rapid acceleration of wind along Kearny St. just west of the existing building as evidenced by a change in wind speed ratios from 0.13 at the intersection of Sacramento and Kearny Sts. to 0.44 and 0.31 alongside the existing buildings. Also, the vortices cause easterly winds on California St. west of Kearny St. in the wake of the 650 California St. Building. (c) A large turbulent wake is created downwind of the Bank of America Headquarters Building which extends many blocks downwind of the building.

Impact of project. The presence of the project would create the following changes in the wind environment: (a) two vertical vortices would be formed off of the northeast and southwest corners of the proposed building and would create swirling winds on California St. (just south of the proposed building). However, these winds would be low and moderately low. (b) There would be no change in the wind patterns on Portsmouth and St. Mary's Squares. (c) There would be increased wind speeds, from low to moderately low, along California St. and at the intersection of California and Kearny Sts. (d) There would be a decrease of winds along Kearny St. just west of the proposed building due to an altering of the vertical vortices formed off of the 650 California St. Building. This effect would lessen the rapid acceleration the wind experiences under existing conditions.

Alternative One. The presence of the alternative building would create the following changes in the wind environment of the site vicinity, in addition to the effects described for the project: (a) The shorter building height of the alternative building would increase wind speeds on the south side of California St. across from the site (from 0.20 to 0.29 wind speed ratios). (b) There would be an increase in wind speed ratios from 0.17 to 0.28 at the mid-block location south of California St. (c) There would be an approximate 10% increase in winds on California St. west of Kearny St.

Southwest Winds

Setting. The near surface wind speeds are low and moderately low at many measured locations except for winds occurring along California St. where the winds are moderate and moderately high. This phenomenon is due to preferential channeling of winds along California St. Also, at the northwest corner of the Bank of America Headquarters Building a moderate wind with wind speed ratio of 0.48 exists due to turning of the wind from Kearny St. Other wind features that characterize the wind environment are: (a) Low and moderately low winds occurring on Portsmouth and St. Mary's Squares. (b) two vertical vortices formed off of the northeast and southwest corners of the 650 California St. Building. (c) Moderate and moderately high winds occurring at the intersection of California and Kearny Sts., representing the highest street level wind speeds observed at any location under existing conditions.

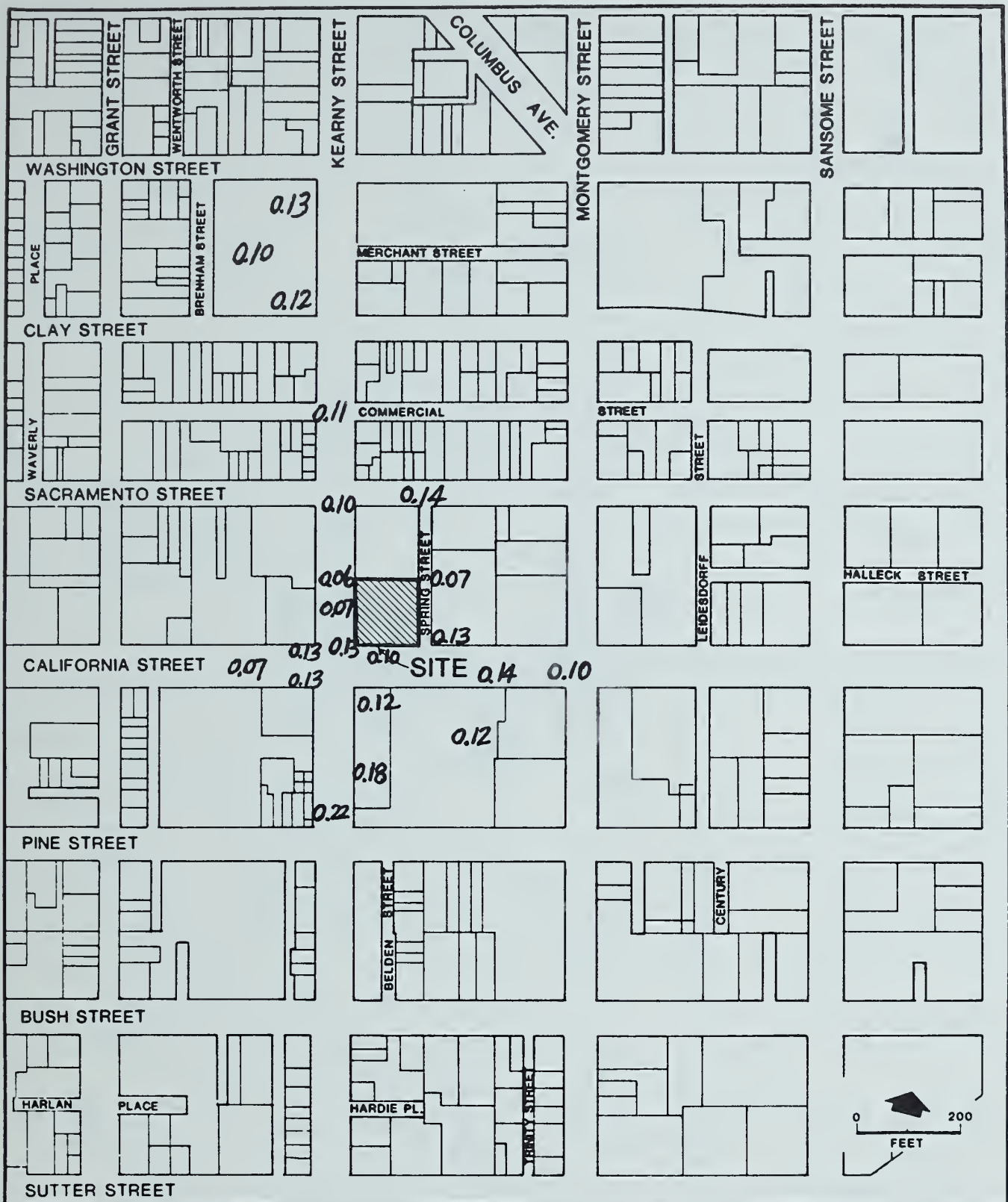
Impact of project. The presence of the proposed building would create the following changes in the wind environment: (a) The winds at the intersection of Sacramento and

Kearny Sts. would more than double from low to moderate winds (from 0.13 to 0.31 wind speed ratios). (b) The Portsmouth and St. Mary's Squares winds would remain the same. (c) There would be less wind along California St. at street level, due to a diverting of winds above the street; (d) The two vertical vortices formed off of the 650 California St. Building would not be present since much of the wind would be directed over the proposed building.

Alternative One. The presence of the alternative building would result in essentially the same wind patterns as for the proposed setting.

IV. MITIGATION MEASURES

The most undesirable changes in the wind environment due to the presence of the proposed building would occur along California and Kearny Sts. adjacent to the site, and at the intersection of Sacramento and Kearny Sts. for the northwesterly and southwesterly winds, respectively. Mitigating measures that should substantially reduce pedestrian discomfort along both Kearny and California Sts. along the proposed building would be the construction of small structures that could function as windbreaks along the sidewalks. They could include, but are not limited to, mature street trees, kiosks for newspapers, flower vendors, telephone booths, or low (10-15 ft. high) streetside planters along California and Kearny Sts. on the block of the proposed building.



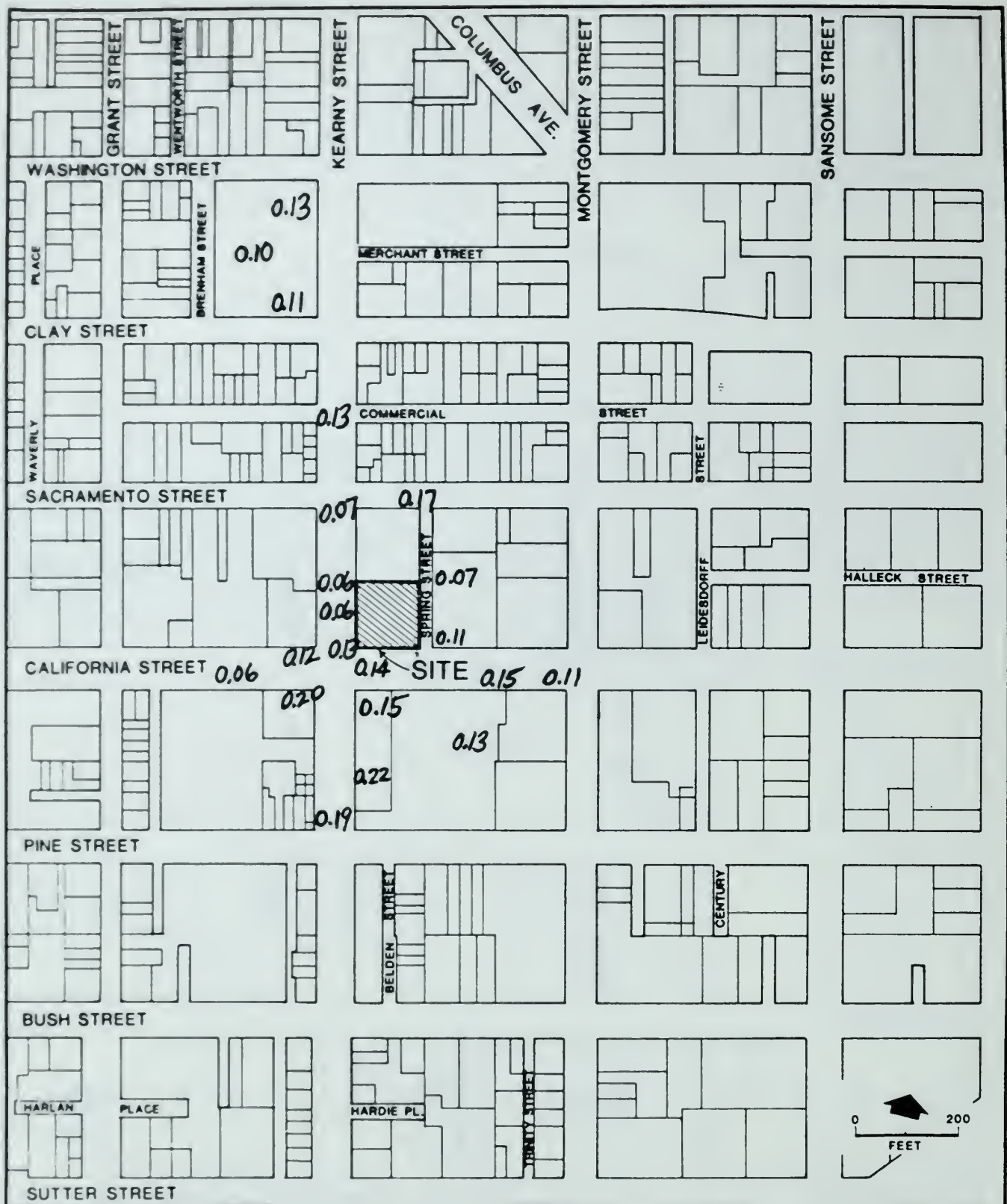
LEGEND



Project Location

**FIGURE D1: Wind Speed Ratios
for West Wind
- Existing**

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



LEGEND



Project Location

FIGURE D2: Wind Speed Ratios
for West Wind
- Project

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.

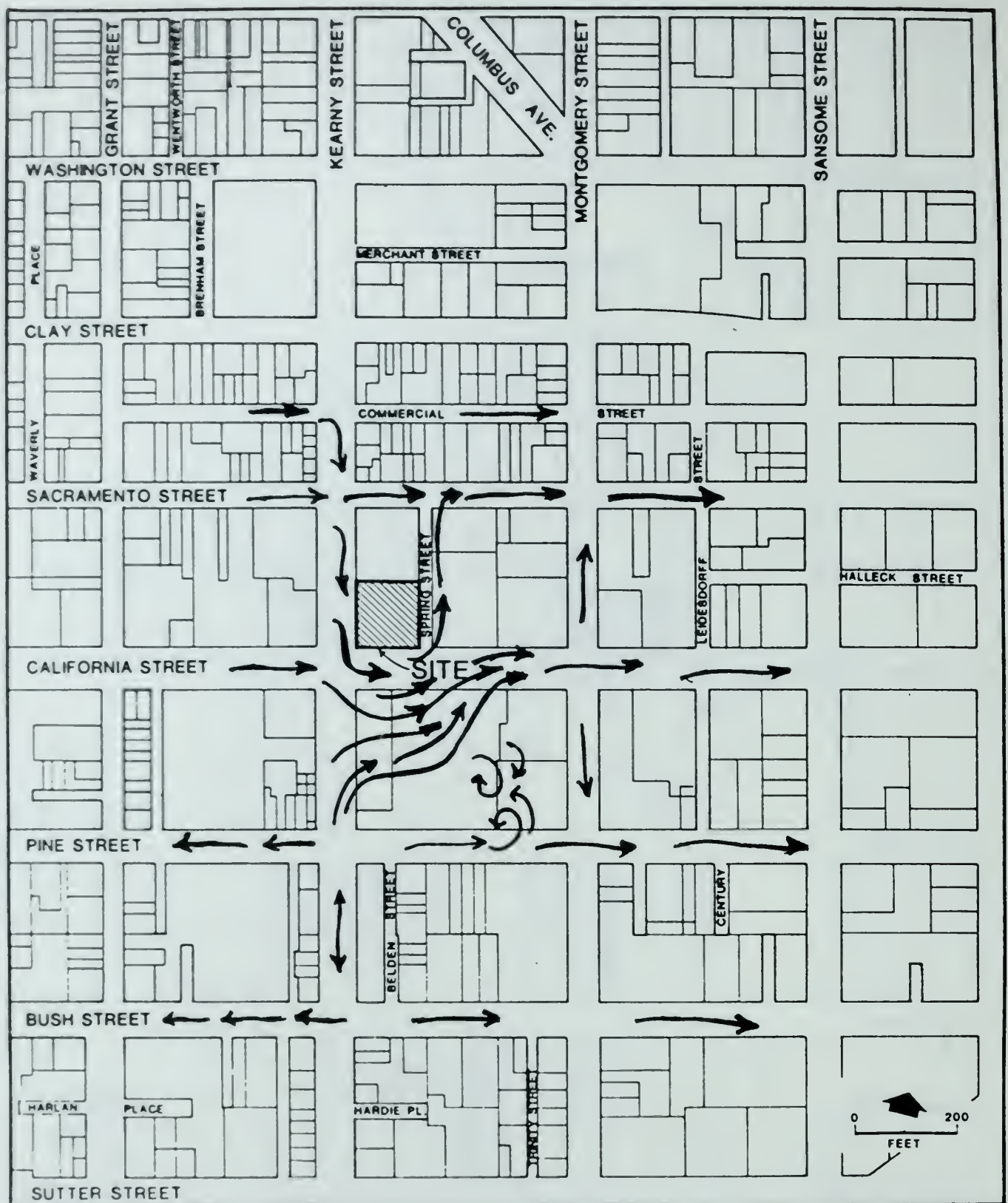
LEGEND



Project Location

**FIGURE D3: Wind Speed Ratios
for West Wind
– Alternative One**

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



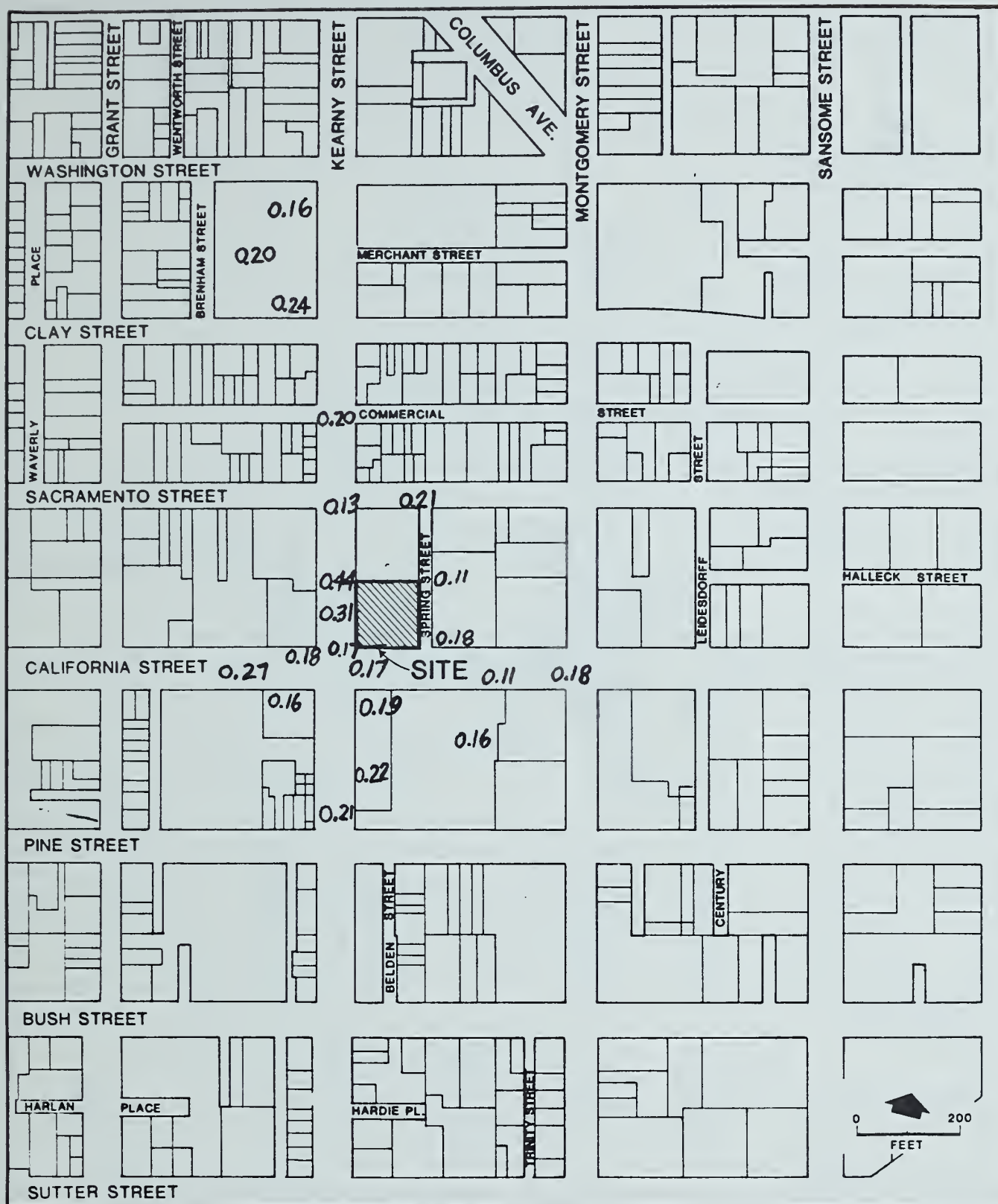
LEGEND



Project Location

FIGURE D4: Wind Flows for
West Wind -
Existing, Project and
Alternative One

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



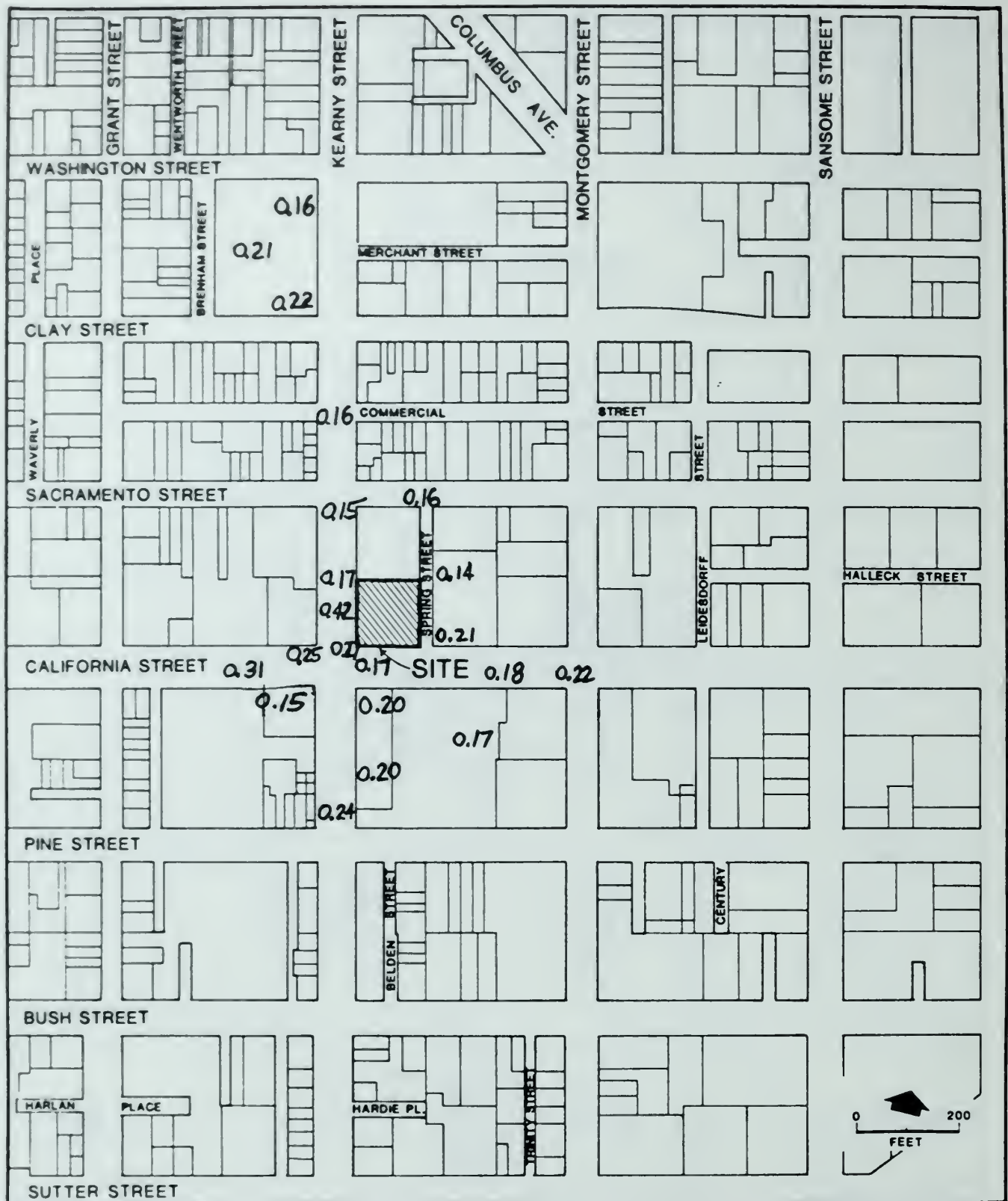
LEGEND



Project Location

**FIGURE D5: Wind Speed Ratios
for Northwest Wind
- Existing**

**SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.**



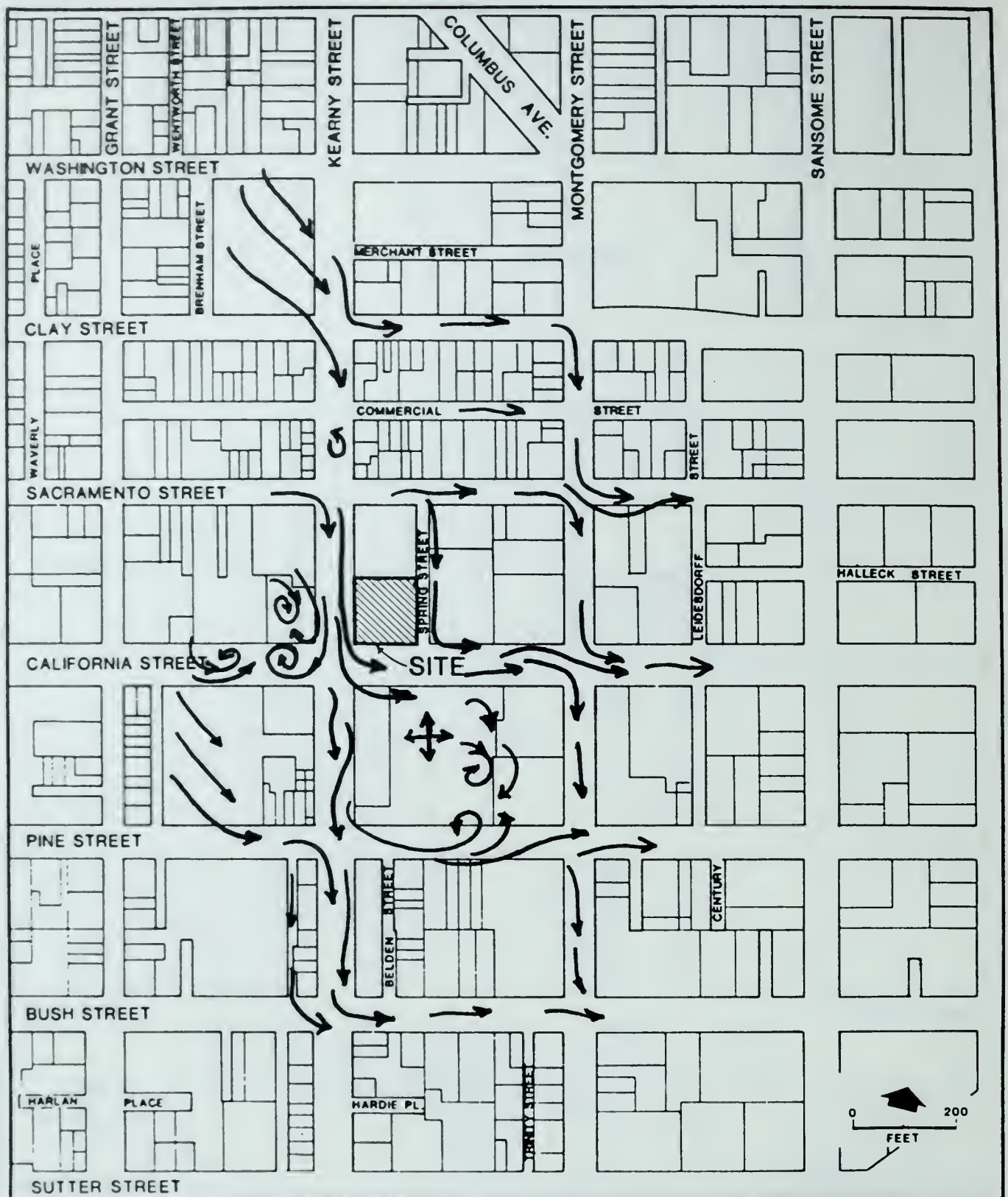
LEGEND



Project Location

FIGURE D6: Wind Speed Ratios
for Northwest Wind
- Project

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



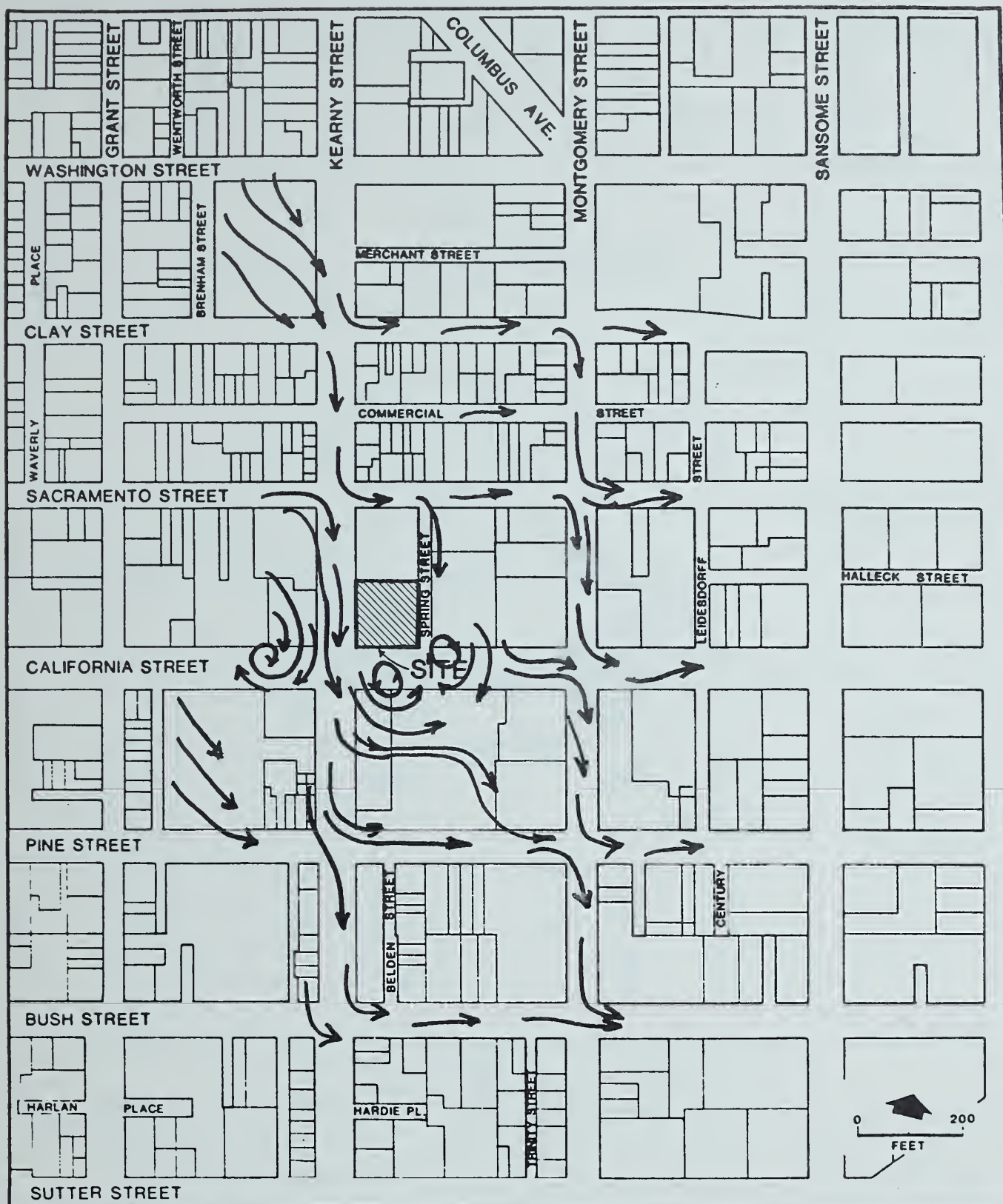
LEGEND



Project Location

**FIGURE D8: Wind Flows for
Northwest Wind
- Existing**

**SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.**



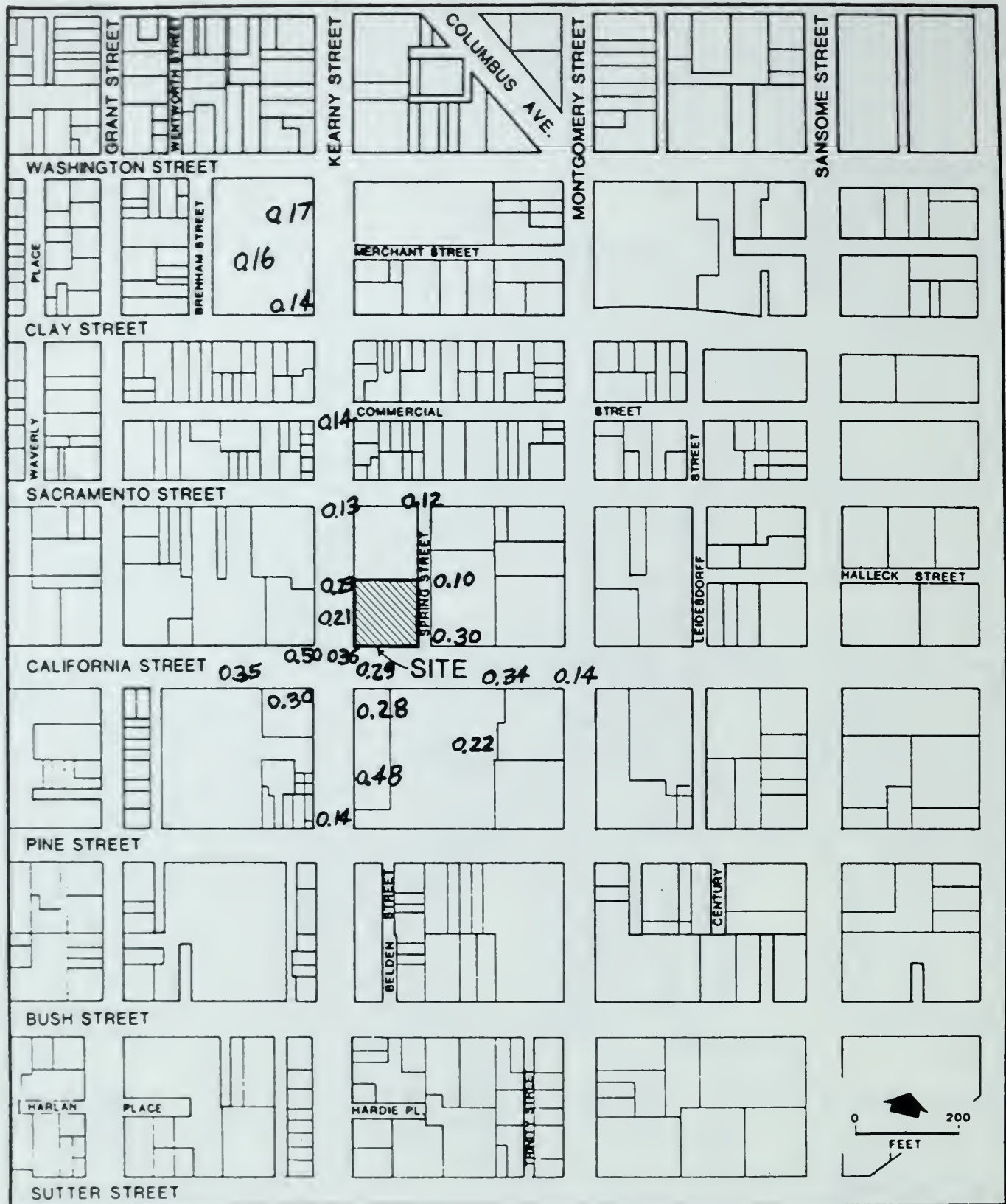
LEGEND



Project Location

**FIGURE D9: Wind Flows for
Northwest Wind
– Project and
Alternative One**

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



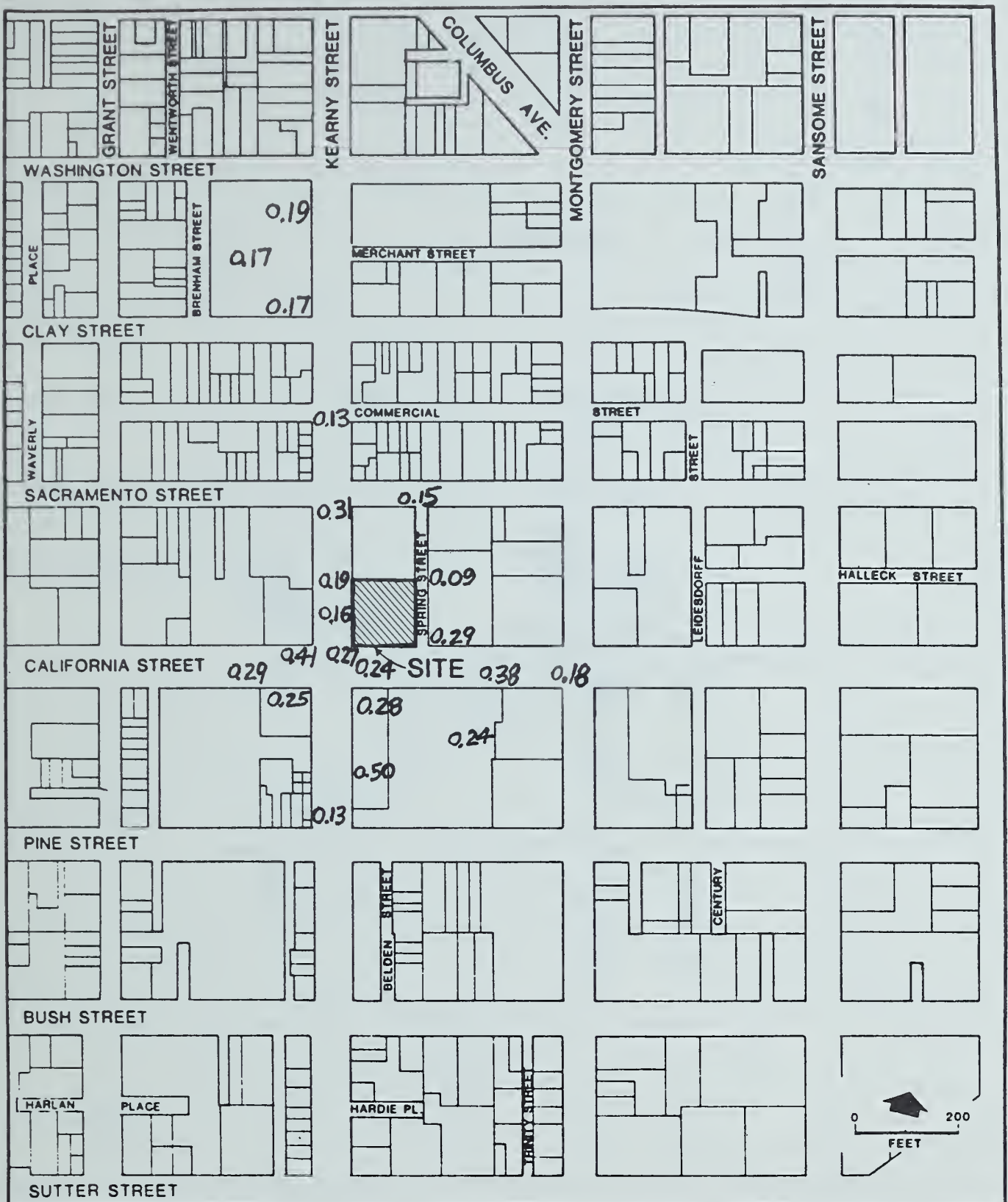
LEGEND



Project Location

FIGURE D10: Wind Speed Ratios
for Southwest Wind
- Existing

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



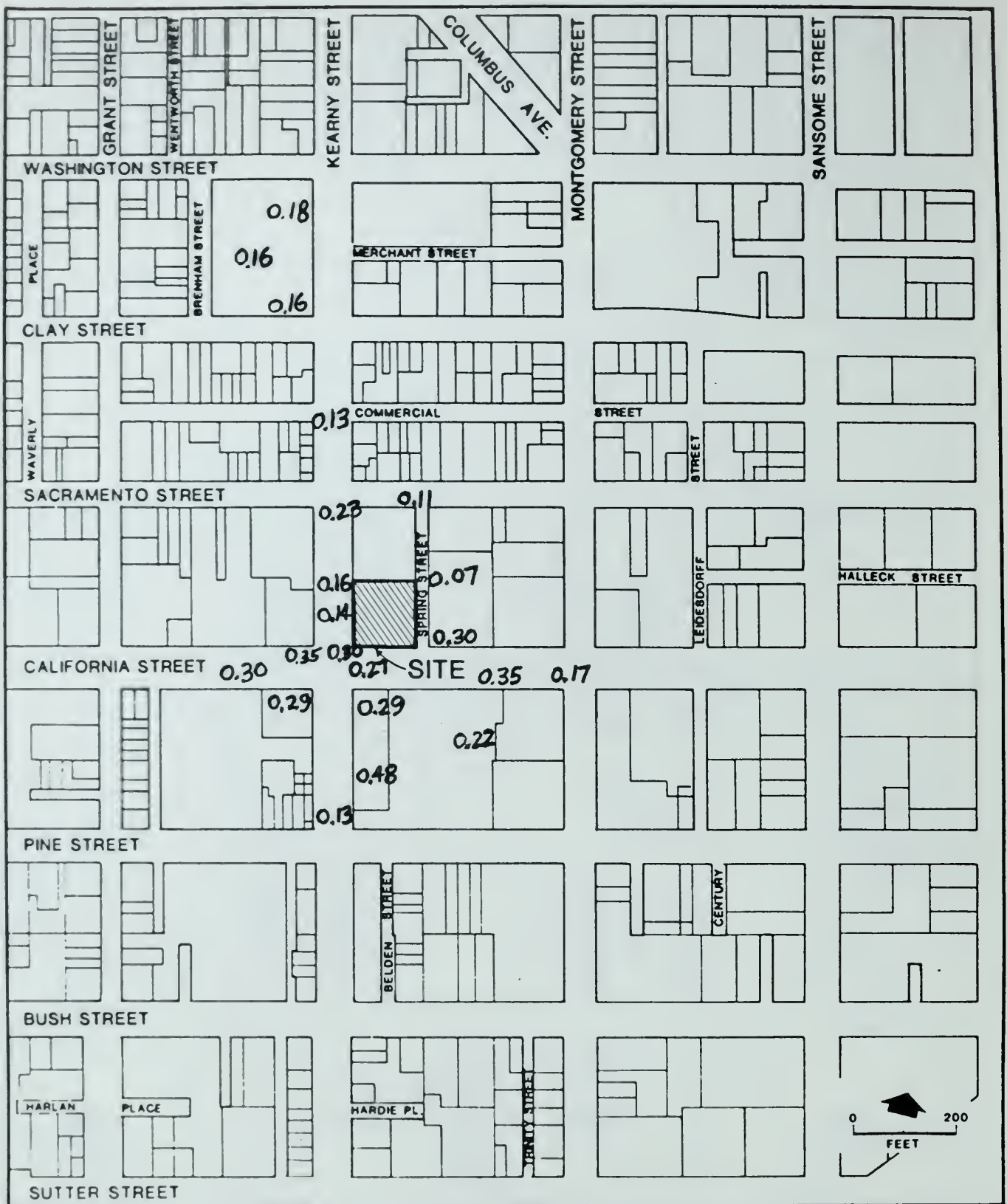
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Project Location

**FIGURE D11: Wind Speed Ratios
for Southwest Wind
- Project**

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



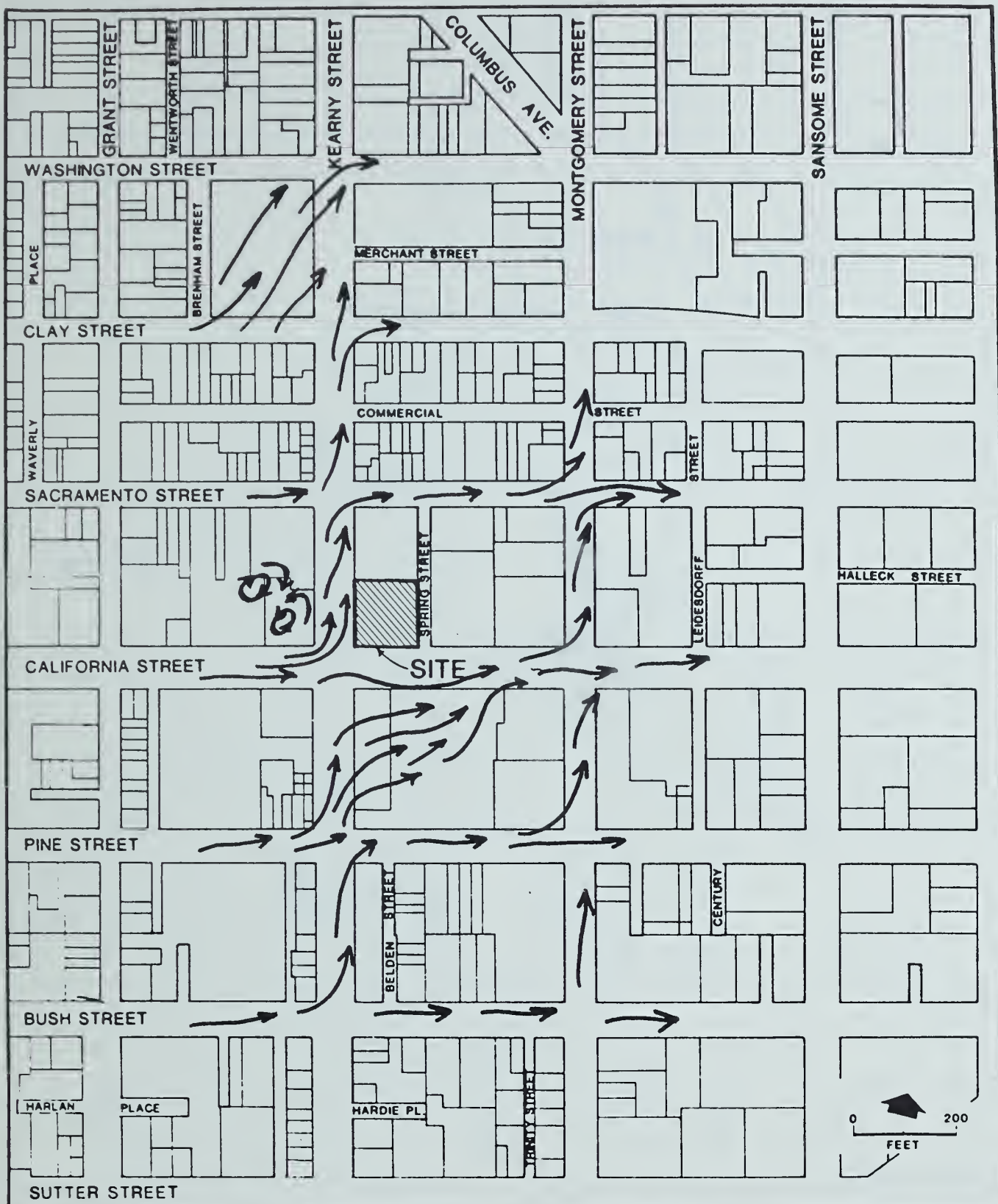
LEGEND



Project Location

FIGURE D12: Wind Speed Ratios
for Southwest Wind
- Alternative One

SOURCE: Dr. Bruce White and
Environmental Science Associates, Inc.



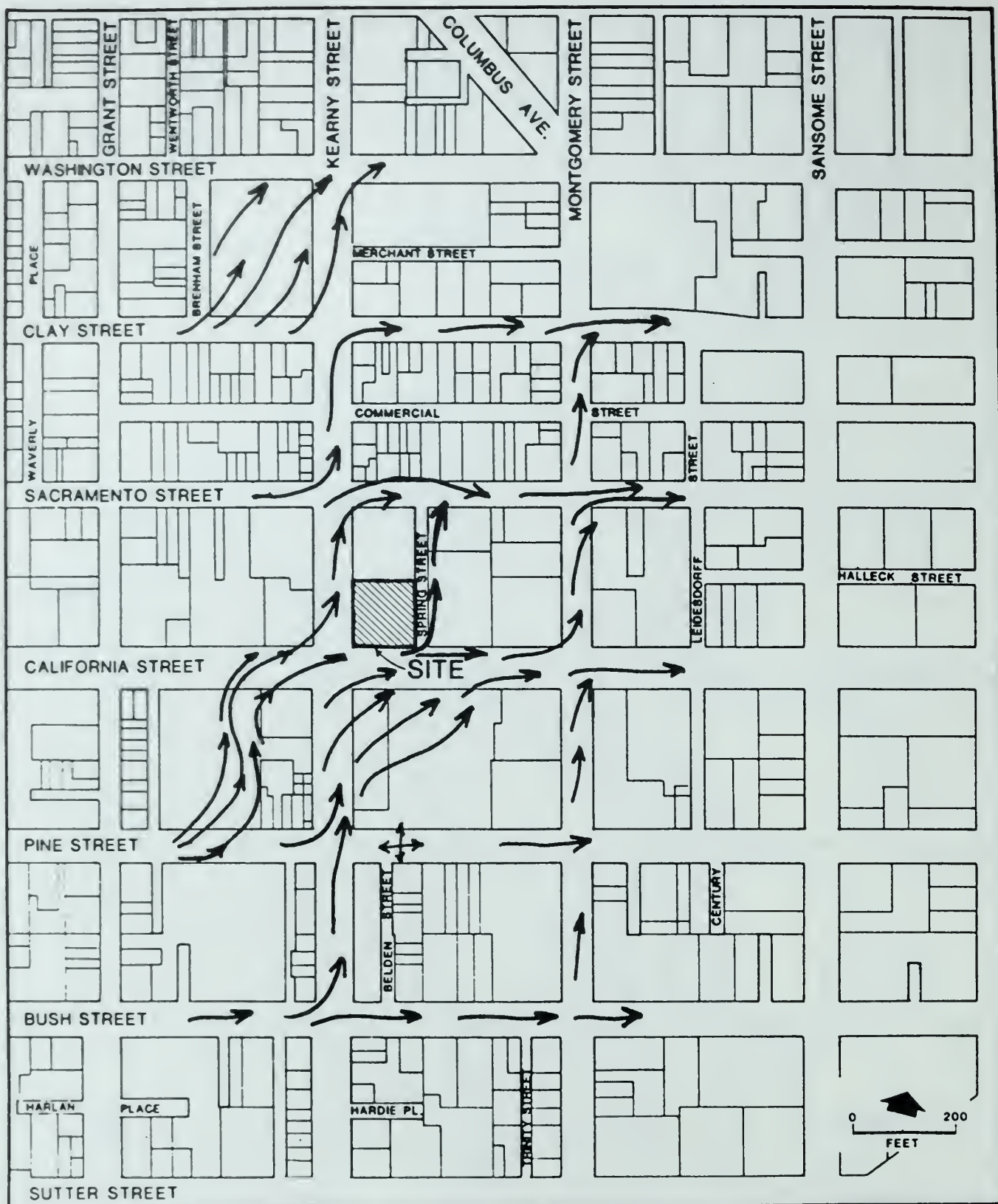
LEGEND



Project Location

FIGURE D13: Wind Flows for Southwest Wind - Existing

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.



LEGEND



Project Location

FIGURE D14: Wind Flows for Southwest Wind - Project and Alternative One

SOURCE: Dr. Bruce White and Environmental Science Associates, Inc.

APPENDIX E: EMPLOYMENT, HOUSING AND FISCAL FACTORS

TABLE E-1: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS,
1980-85

	Residency of S.F. Office Employees Percent	Project Demand in 1985 Number of Households	Cumulative Demand 1982 to 1990(c)		Net Housing Stock Growth 1982-1990(d) No. Units	Demand as a Percent of Growth 1982 to 1990 Project Cumulative	
			Number of Employees	Number of Households			
San Francisco (a)	40 & 15-30	145 to 295	9,700 to 25,800	6,900 to 14,700	12,000	0.3 to 0.7	57.5. to 119.2
Peninsula (b) (San Mateo and Santa Clara Cos.)	18	185	11,600	8,900	87,600	0.1	10.2
East Bay (a) (Alameda and Contra Costa Cos.)	30	310	19,300	14,900	111,800	0.1	13.3
North Bay (b) (Marin and Sonoma Cos.)	12	125	7,700	5,900	36,800	0.1	16.0
TOTAL	100	765 to 915	48,300 to 64,400	36,600 to 44,000	248,200	0.1	14.7 to 17.7

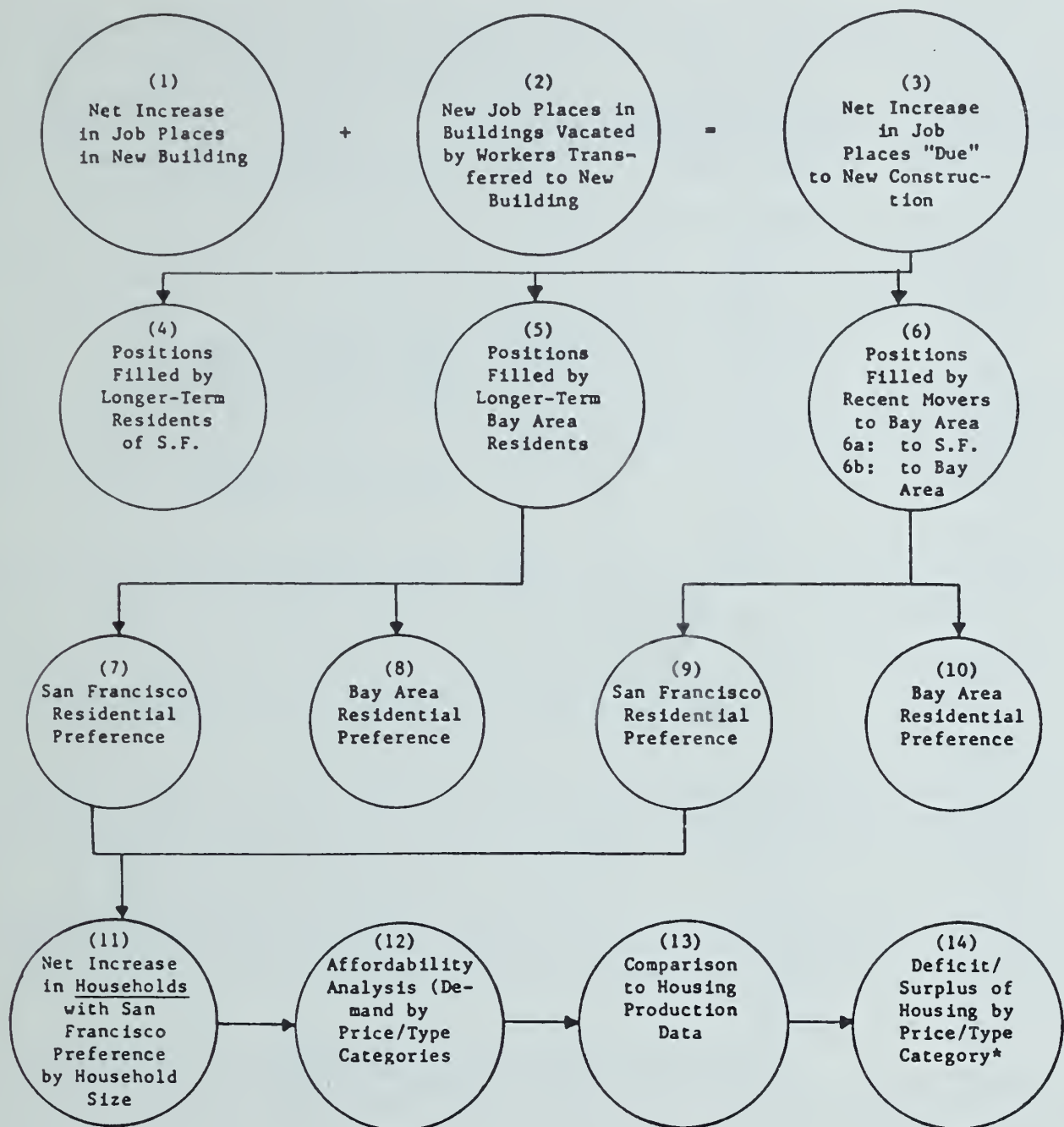
(a) Range of San Francisco employees and households based on 101 Montgomery Street Final EIR, EE80.26, certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

(b) Distribution of employees based on weighted average of expected employees in Federal Reserve Bank (EE78.207), 101 California Street (EE78.27), Pacific Gateway, (EE78.61), and Crocker National Bank (EE78.298), from 456 Montgomery Street Final EIR (EE78.178), p. 167. Workers per household in non San Francisco Counties is assumed to be 1.3 based on 1980 Census data.

(c) Total office space considered in this analysis is about 16.1 million sq. ft. of net new office space (see Tables B-2 and -3). The proposed Housing Element (May 1982) estimates San Francisco housing needs from 1980-85 in Table 21A. This estimate, based on the Citizen's Housing Task Force Report, July 21, 1981, shows a need for about 16,000 to 19,000 units. The "needs" estimate uses a similar office development basis but also includes housing demand generated by other sources in addition to office development and covers the years 1980-85.

(d) Net housing stock growth based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

SOURCE: Environmental Science Associates, Inc.



* Demand due to citywide employment growth need also be considered here.

FIGURE E-1:
Housing Demand and Affordability
Model for New, High-Rise
Office Building

SOURCE: Questor Associates, June 1982

TABLE E-2: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing Expenditure*	Housing Cost and Type of Unit			Source
		Monthly Cost**	Type of Unit	(Price)	
\$5,000	\$125				
8,300 (a)	208				
10,000	250				
10,680	267	\$267 -	Census Median Rent		(e1)
11,560	289	289 -	Studio Apartments		(f1)
15,000	375				
18,200	455	455 -	Median Rent, All Units		(f2)
20,000	500				
23,520	588	588 -	Rent, 3+ Bedroom Units		(f3)
25,000 (b)	625				
27,300 (c)	683				
30,000 (b)	750				
35,000	875				
40,000	1,000				
40,880	1,022	1,022 -	Lowest House Price (\$95,000)		(g1)
45,000	1,125	1,125 -	Census Median Value (104,600)		(e2)
50,000	1,250				
52,560	1,314				
55,000	1,375				
65,080	1,627	1,627 -	Median House Price (151,203)		(g2)
101,880	2,547	2,547 -	Highest House Price (236,750)		(g3)
300,000 (d)	7,500				

(continued)

TABLE E-2: Continued

* The Office Housing Production Program (OHPP) Interim Guidelines, January, 1982, define affordable housing as follows:

rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.

For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that eight percent of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.

** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.

- a. U.S. Bureau of Labor Statistics, March, 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." \$8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.
- b. The range of \$25,000 to \$30,000 is assumed to approximate the median annual income of project employees (see discussion of Income, p. 27).
- c. The \$27,300 income figure was derived by inflating the \$16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.
- d. Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be \$52,560 and the highest salary for corporate officers \$300,000, according to a 1981 survey.
- e. City Planning and Information Services, "1980 Census Information," March 1982: 1. median rent 2. median noncondominium housing value
Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.
- f. Department of City Planning, "Rent Survey," 1980. Median rents are for:
1. studio apartments 2. all units 3. 3+ bedrooms
These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.
- g. San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices including all homes sold from February 11, 1981 to October 1, 1981):
1. lowest price 2. median price 3. highest price

SOURCE: Environmental Science Associates, Inc.

TABLE E-3: SUMMARY OF RECENT STUDIES ON FISCAL IMPACT OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 and 1978-79 how much revenue the C-3-0 area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-0 and costs of providing services to the C-3-0 counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-0 generated \$56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were \$53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs."
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-0 and the service costs imposed on the city and BART by the C-3-0.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-0.	The C-3-0 imposed costs of \$94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates March 1981	To quantitatively estimate city revenues from the C-3-0 and costs of serving the C-3-0 in 1998, assuming the addition of 30 million square feet of building space in the C-3-0 between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-0 district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-0 were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-0 building space would increase to 1.92 times as large as costs.

SOURCE: Recht Hausrath and Associates, January 1981.

APPENDIX F: TRANSPORTATION

Travel Demand

Travel demand from the 16.1 million gross sq. ft. of net new cumulative office development and 535,000 gross sq. ft. of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning (DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table B-2 shows the list of projects separated by review status and includes Assessor's Block number and DCP case number for each project. Table B-3 contains the total gross square feet of office and retail space for each review status category. The information contained in these tables represents the best data available from the Department of City Planning at the time of preparation of this document.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table D-3, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space).

Estimates of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable sq. ft. of net new office space and 100 person trip ends (pte) per 1,000 gross sq. ft. of net new retail space./1/ Gross sq. ft. of office space was converted to net leasable sq. ft. by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./2/

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table F-1. During the p.m. peak hour about 20% of the office travel and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% (during peak-hours) was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./3/

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the north Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle./4/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./5/

TABLE F-2: EXISTING AND PROJECTED MUNI LOAD FACTORS*
(PM PEAK HOUR — OUTBOUND DIRECTION)

Line	RIDERSHIP				LOAD FACTORS			
	Existing	Future w/o project	project	Future w/project	Existing	Future w/o project	Future w/project	project
1	1453.	1956.	11.	1967.	0.93	1.25	1.26	0.01
1X	640.	871.	5.	876.	1.11	1.51	1.52	0.01
2	474.	663.	4.	667.	1.10	1.54	1.54	0.01
3	520.	702.	4.	706.	1.08	1.46	1.47	0.01
4	467.	630.	4.	634.	1.08	1.46	1.47	0.01
5	981.	1498.	8.	1506.	0.94	1.44	1.44	0.01
6	544.	831.	4.	835.	0.84	1.28	1.29	0.01
7	407.	622.	3.	625.	0.77	1.18	1.18	0.01
8	657.	1004.	5.	1009.	0.74	1.13	1.14	0.01
9	468.	714.	4.	718.	0.89	1.35	1.36	0.01
11	184.	281.	1.	282.	0.64	0.97	0.98	0.01
12	451.	688.	4.	692.	0.85	1.30	1.31	0.01
14	1038.	1586.	8.	1594.	0.92	1.41	1.41	0.01
14GL	205.	312.	2.	314.	0.71	1.08	1.09	0.01
15	632.	924.	5.	929.	0.88	1.28	1.29	0.01
17X	162.	219.	1.	220.	0.64	0.87	0.87	0.01
21	643.	982.	5.	987.	0.85	1.30	1.31	0.01
30	1415.	1941.	11.	1952.	0.92	1.26	1.27	0.01
30X	435.	590.	3.	593.	0.86	1.17	1.18	0.01
31	657.	938.	5.	943.	1.07	1.53	1.54	0.01
31X	413.	562.	3.	565.	0.96	1.30	1.31	0.01
38&L	1963.	2738.	15.	2753.	1.01	1.41	1.42	0.01
38AX	453.	616.	4.	620.	1.26	1.71	1.72	0.01
38BX	272.	370.	2.	372.	0.96	1.31	1.32	0.01
41TC	119.	166.	1.	167.	0.41	0.58	0.58	0.01
42	393.	594.	3.	597.	0.99	1.50	1.51	0.01
45	561.	757.	4.	761.	0.90	1.21	1.22	0.01
66L	555.	741.	4.	745.	0.77	1.03	1.03	0.01
71	447.	683.	3.	686.	1.10	1.67	1.68	0.01
80X	416.	586.	3.	589.	0.83	1.16	1.17	0.01
J	909.	1389.	7.	1396.	0.84	1.28	1.28	0.01
KLMN	5725.	8744.	45.	8789.	0.96	1.46	1.47	0.01

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum loading of the transit vehicles which is 150% of seated capacity except for the LRV fleet, which can carry 220% of seated capacity. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity.

SOURCE: Department of City Planning; Environmental Science Associates, Inc.

TABLE F-3: VEHICULAR LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity* v/c Ratio
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generally described as very good.	0.61- 0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71- 0.80
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81- 0.90
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91- 1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.00

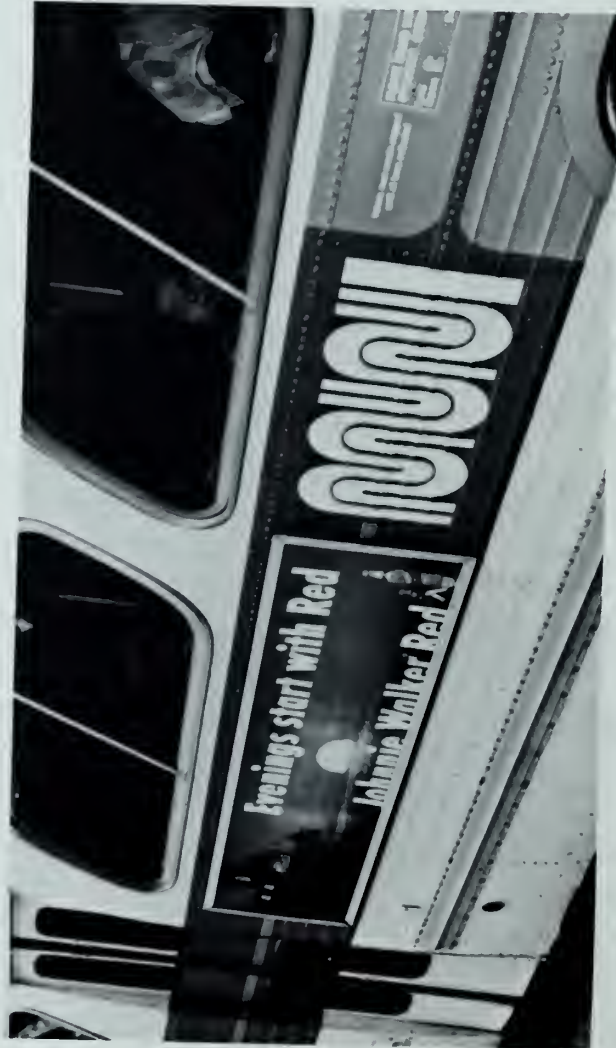
* Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering, 1965.



K Ingleside - Van Ness Station

Wednesday, September 9, 1981 - 8:00 A.M. - Inbound



38 Geary - Van Ness Ave. and O'Farrell St.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound



N Judah - Van Ness Station

Wednesday, September 16, 1981 - 5:00 P.M. - Outbound



38 Geary - Van Ness Ave. and Geary Blvd.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE F1: Photographs of Peak
Muni Loading Conditions



11 Hoffman - Mission St. and S. Van Ness Ave.
 Wednesday, October 21, 1981 - 8:10 A.M. - Inbound



11 Hoffman - Mission St. and S. Van Ness Ave.
 Tuesday, September 29, 1981 - 5:10 P.M. - Outbound



30X Marina Express - Bayshore Ave. and Arieta Ave.
 Wednesday, October 7, 1981 - 8:00 A.M. - Inbound



J Church - Church St. and Duboce Ave.
 Tuesday, September 29, 1981 - 9:00 A.M. - Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE F2: Photographs of Peak
 Muni Loading Conditions



M Ocean View - Civic Center Station

Wednesday, September 9, 1981 - 8:20 A.M. - Inbound



14 Mission - Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 - 5:45 P.M. - Outbound



L Taravai - Van Ness Station

Wednesday, September 16, 1981 - 4:50 P.M. - Outbound



N Judah - Irving St. and Ninth Ave.

Tuesday, September 29, 1981 - 8:20 A.M. - Inbound

TABLE F-4: PEDESTRIAN FLOW REGIMEN

FLOW REGIME	CHOICE	CONFLICTS	FLOW RATE (P/F/M)*	
			Average	percent of Capacity used
Open	Free Selection	None	0.5	0.0-3.0
Unimpeded	Some Selection	Minor	0.5-2	3.1-11.0
Impeded	Some Selection	High Indirect Interaction	2-6	11.1-33.0
Constrained	Some Restriction	Multiple	6-10	33.1-56.0
Crowded	Restricted	High Probability	10-14	56.1-78.0
Congested	All Reduced	Frequent	14-18	78.1-100.0
Jammed**	Shuffle Only	Unavoidable		above 100.0

* P/F/M = Pedestrians per foot of a effective sidewalk width per minute.

** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, MIT Press, 1975, Cambridge, MA.

Employment Trend Approach to Cumulative Analysis

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate the transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach).^{6/} Briefly, the fundamental differences between (and limitations of) the two approaches are:^{7/}

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation. The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 580 California St. project development and occupancy. No allowance has been made for less than 100% occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the 580 California St. project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table F-5 shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

As shown in the table, the employment trend approach predicts about 15% fewer employees in the downtown and about eight percent more riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed on pp. 75-77 of the EIR.

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this EIR, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of 5% is not uncommon.^{6/} With 16.1 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a 5% vacancy would amount to approximately 805,000 sq. ft., representing 7,200 employees (at 250 sq. ft. per employee), 600 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 600 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum^{6/} points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

TABLE F-5: COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown Employment Increase	Project Share*	Regional Trip Share				Muni Peak-hour Increase**	Project Share***
			S.F.	Pen.	E.B.	N.B.		
Land Use	64,400	1.7%	49%	16%	24%	11%	12,000	1.6%
Empl. Trend+ (maximum)	56,100	2.0%	50- 54%	19%	17- 21%	10%	12,900++	1.5%

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

*Employment generated by the proposed 580 California Street project, as a percent of the cumulative downtown employment increase.

**The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

***Muni peak-hour trips generated by the proposed 580 California St. project, as a percent of the cumulative downtown Muni peak-hour increase.

+These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni. Note that the land-use approach entries assume that an additional net new 16.1 million gross sq. ft. of office space will come on line by late 1990.

++Based on 54% regional trip split to San Francisco (worst-case).

SOURCE: Environmental Science Associates, Inc.

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

NOTES - Appendix F

/1/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/2/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/3/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/4/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/5/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/6/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/7/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

APPENDIX G: AIR QUALITY

TABLE G-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981

STATIONS: 939 Ellis Street (1979) and 900 23rd St. (1980-81), San Francisco

<u>POLLUTANT:</u>	<u>STANDARD</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
OZONE (O ₃) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	0.10/b/ 0.12/c,d/	0.08	0.09	0.07
Number of standard excesses (state)		0	0	0
Expected Annual Excess (national)/d/		0.0	0.0	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35/c/	20	10	8
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9/c/	13.8	7.5	5.3
Number of standard excesses		1	0	0
NITROGEN DIOXIDE (NO ₂)				
1-hour concentration (ppm)				
Highest hourly average	0.25/b/	0.16	0.17	0.11
Number of standard excesses		4	0	0
SULFUR DIOXIDE (SO ₂)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05/b/	0.034	0.018	0.016
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m ³ /g/)				
Highest 24-hour average	100/b/	117	173	103
Number of standard excesses/f/	1	1	6	
Annual concentration (ug/m ³)				
Annual Geometric Mean	60/b/	42.0	52.1	56.0
Annual standard excess		No	No	No
LEAD				
Calendar quarter concentration (mg/m ³)				
Highest quarterly average	1.5 /b/	0.95	0.53	0.35
Number of standard excesses		0	0	0

(continued)

TABLE G-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1979-1981 (Continued)

/a/ ppm: parts per million.

/b/ California standard, not to be equaled or exceeded.

/c/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).

/d/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979 and is now expressed in terms of the Expected Annual Excess, which is a three-year average of annual excesses of the 0.12 ppm value.

/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.

/f/ Number of observed excess days (measurements taken once every six days).

/g/ ug/m³: micrograms per cubic meter.

SOURCE: BAAQMD, Air Pollution in the Bay Area by Station and Contaminant; and California Air Resources Board, California Air Quality Data.
